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ABSTRACT

Reported is a compilation of the data collected from a comprehensive evaluation of the Information Retrieval Center of the Northern Colorado Educational Board of Cooperative Services (NCEBOCS) The evaluation consists of an historical review of the Center (1967-1970), analysis of requests received, user reactions to the services, interviews with administrative personnel of the member school districts, interviews with coordinators from each of the seven participating states, interviews with Retrieval Center staff members, evaluation of a two-week workshop attended by key users, suggestions from teacher trainers on the operation of the Center, and progress reports provided to the Retrieval Staff on use in improving the operation of the Center. The evaluators consider the Information Retrieval Center an effective unit. Response to the service is favorable, and the center appears to have some impact on educational practice. Recommendations for change relate primarily to refinement and extension of present activities. Data compiled is appended in tabular form. (SJ)

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ED 059721

Evaluation

of

THE INFORMATION RETRIEVAL CENTER

of the

Northern Colorado Educational

Board of Cooperative Services

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Boulder, Colorado 80301

by

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Preface

In July, 1970, a contract was defined wherein the Human Factors Research Laboratory at Colorado State University would conduct a comprehensive evaluation of the Information Retrieval Center of the Northern Colorado Educational Board of Cooperative Services. The essential plan for the evaluation provided that a variety of sources for evaluation data would be considered and several kinds of information would be collected. A copy of the evaluation proposal is shown in Appendix A. Review of the proposal indicates that specific details of the evaluation were to be developed later, however, and some of the evaluation would depend upon the activities in which the Retrieval Center was engaging at the time the evaluation was made. As the Fiscal Year 1970-71 progressed, details of the evaluation were finalized and appropriate data collected. In its final format, the evaluation consisted of the following:

1. An historical review of the Center from its inception in 1967 through 1970 was developed. This review incorporated all historical data available in the files of the Center.

2. All requests received by the Center between its inception in 1967 through December, 1970 were classified into topical categories, coded, and analyzed according to thirteen variables.

3. A comprehensive user questionnaire was developed to assess reactions of users to the Center. This questionnaire was mailed to a 20% sample of users during calendar year 1970. More than

75% of those receiving the questionnaire responded. Reactions of the user sample were coded and analyzed according to three demographic characteristics of the users.

4. Personal interviews were conducted with at least two administrative personnel from each of the seven BOCES districts served by the Center in the Fall of 1970, and at least one interview with the administrators of each district was conducted during the Spring of 1971. Interview responses were summarized and interpreted.

5. Coordinators from each of the states participating in Information Retrieval Center activities (Colorado, Wyoming, Utah, Nevada, Washington, Oregon, and South Dakota) were interviewed in depth and complete interview reports were prepared for each state. The interview reports included observations of the interviewers and data obtained when the states were visited.

6. Staff members of the Retrieval Center were interviewed for their reactions and suggestions regarding operation of the Center. These interviews were summarized and converted to operational suggestions.

7. An evaluation was conducted of a two-week institute attended by key personnel from participating states and districts. This evaluation was disseminated to Retrieval staff personnel as one portion of an on-going assessment of Retrieval Center procedures.

8. Interviews were also conducted with teacher trainers on university campuses to obtain their suggestions about the operation of the

Retrieval Center. As with other interview data, responses were summarized and translated into operational suggestions.

9. Several verbal and written progress reports were provided to the Retrieval Center staff throughout the year for use in improving the operation of the Center. In some instances, these reports were incorporated into evaluations being made by other agencies such as the Colorado State Department of Education.

The present volume is a compilation of the data collected through the foregoing efforts. The report is organized according to the evaluation activities as outlined and can be studied in total or in segments as the purpose of the reader dictates.

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I. Historical Review

of

The Information Retrieval Center of the NCBOCES

Introduction

On November 16, 1966, the Boulder Valley School District RE-2J received a planning grant from the U.S. Office of Education under the Elementary and Secondary Education Act Title III for the development of a "Cooperative Community Educational Resources Center." The project was initially funded from January 1, 1967 to December 31, 1967. Additional grants have been received annually which permitted project continuation. Initially, the project was under the directorship of Mrs. Violet Wagener (1967-68) and subsequently Mr. William H. McCleary (1969-71).

On May 1, 1970, the Resources Center was incorporated under the Northern Colorado Board of Cooperative Education Services (NCBOCES). The Educational Information Retrieval Service has continued to be one of the functions performed by the BOCES. Other activities have included program development and program evaluation (through 1970).

The original proposal addressed itself to the increasing need for bringing the consumers of educational resources closer to research and resource information in the field of education. In addition, the need was expressed for this information to be provided in a more efficient and effective manner. The original purpose of the Resources Center, then was the establishment of a communications process which would provide educators, administrators and the community with information on the latest developments in the field of education.

As stated in the 1970 Continuation Grant Proposal, the general objectives were as follows:

"1. To keep individual educators aware of professional developments within specific areas of interest and abreast of the availability of the research and reference materials supporting those needs and interests.

"2. To provide educators with the opportunity to make formal requests for research materials in support of either specific curriculum areas or broad educational topics of interest.

"3. To provide educators with the knowledge of a wider variety of appropriate instructional resources for individualizing the learning process. Service may be obtained on a routine current awareness or single request basis."

In attempting to fulfill these objectives, the Resources Center has been operating in the following manner: The Center provides educational personnel contacting it (teachers, librarians, teacher aides, administrators, and parent study groups) with abstracts and summaries of educational data in the form of computer printouts. In addition, the Center provides manual search services by reference librarians who provide annotated lists and summaries of print and non-print materials and resources requested by people using the Center's services. Individuals with a problem of an educational nature or area of interest may contact the Information Retrieval Center by mail or phone. Members of the staff analyze the request and assign educational key words or descriptor terms matching the request to the problem area. While these terms are fed into the computer and abstracts

from the stored data bank obtained, reference librarians conduct a manual search of local libraries and reference centers. The result of this unique combination of in-depth computer search and manual search is a profile of recent research reports, dissertation summaries, periodicals, books, and other pertinent information which is compiled and mailed to the requestor.

Each user's request is maintained in a log containing the nature of the request, the time necessary to process the request, the results of the search in terms of the quantity of abstracts and manual search articles in the profile, and information about possible follow-up requests by the user.

After receiving the profile of educational information relevant to his request, the requestor may order from the Center full documents of abstracts he would like to study further in microfiche or hard copy. He returns any orders he might have along with an evaluation form indicating the usefulness of the materials he had been sent. The user may check out microfiche for a 2-week period. Xerox copies and/or future articles may be obtained from the reference librarians to fill follow-up requests as indicated on the aforementioned evaluation forms. The source of most of the information in the computer data base was abstracts prepared by clearinghouses of the U.S. Office of Education's Educational Resources Information Center (ERIC).

In addition to Colorado, five other states participated in the educational information retrieval services of the Boulder Center in 1970. South Dakota had a direct communications line to the Center and requests were made directly. Utah, Oregon, Washington, and Wyoming established various communications networks of their own. Nevada

participated informally as did requestors from several other states.

Although the program originally leased processing time on a CDC 3800 computer, it later leased a UNIVAC 9300 computer housed in the Center. The data base was divided into two files, one a Current Interest and one History file. The Current Interest file consisted of not more than 5,000 abstracts containing only the most current information in representative educational topic areas. It was used for preliminary or initial information retrieval requests and for periodic current interest requests. The History file contained all other abstracts.

Summary of 1967 Planning Grant

The activities of the 1967 period included attempts to establish a data base, the development of a computer printout system, a manual search service, a current awareness service, and the adaptation and evaluation of two generalized information retrieval programs.

One concern was the development of a plan for selective dissemination of information to staff members in the Boulder County School District and examination of the plan on a pilot basis. IBM Boulder Education Department representatives were consulted and relevant literature was searched to determine the feasibility of using the IBM SDI system for the purpose of the project.

Trial runs of a selective dissemination service were made utilizing the BIRS (Basic Indexing Retrieval System) and INFOL (Information Oriented Language) programs. It was decided that the INFOL program was very sensitive to keypunch errors but allowed more data manipulation and was selected as the project's information retrieval program. Research in

Education abstracts, locally abstracted materials including non-print resources, University of Colorado Education Library book acquisitions and project library materials were keypunched and became the core for the f rst data base.

To facilitate the search with descriptors, a word frequency list, KWOC (Keyword out of context) list and descriptor print-out were added to the ERIC thesaurus. Instead of categorizing literature by level of comprehension difficulty, standard categories with terms such as elementary, secondary, administration, teaching, etc., were assigned to all profiles.

A pilot-operational selective dissemination service was designed, and it was anticipated that it would provide a more efficient and effective way of handling the acquisitioning, cataloguing, and processing of materials. Storage capacity would be large, and it was considered feasible that an indirect service of regional processing would emerge.

While this program was in operation, work progressed on dissemination at the state and national levels. At the local level, schools and school districts interested in receiving the services of the Community Resources Center were given formal presentations during faculty and staff meetings in the 1967 school year.

Seventy-four interest profiles were written for professional educators and administrators at the local district level. Individuals served outside the district included members of the Colorado Department of Education, University of Colorado School of Education, University of Denver School of

Education, Adams County District 12, Adams County District 50, Jefferson County School District, Social Sciences Consortium, University of Colorado, and Title III Directors in Colorado. Computer printouts were distributed to the trial users with an evaluation sheet accompanying each profile. Current awareness profiles were rewritten as interests and descriptors changed in an effort to increase the relevancy of abstracts to user interest. The current awareness searches were usually less specific than the information retrieval or retrospective searches. Manual searches frequently accompanied the computer printouts of abstracts. Both manual and information retrieval searches, for educators outside Boulder Valley District, increased as the service of the project became known even though dissemination outside the district was minimal.

Summary of 1968 Pilot-Operational Grant

OE Project No. OEG 8-8-004438-0019 (056)

January 1, 1968 to December 31, 1968

Objectives of the 1968 Pilot-Operational Grant were the following:

1. To keep teachers and administrators aware of developments and educational resources in the educational field by providing a dissemination of information service.

2. To provide knowledge of a wider variety of appropriate instructional resources for individualizing the learning process.

3. To investigate random access to instructional resources via computer systems.

4. To provide an educational learning avenue for secondary students to make their own identification of resources found in their community environment.

5. To provide information in abstract form about current educational literature to the community through the cooperating agencies and school related groups.

Dissemination of the project will be directed to four audiences: Teachers, students and cooperating agencies in their roles of users and suppliers of information; the Boulder County community in its role of a resource and potential user; interested persons in education, library and information science fields; educational agencies outside Boulder County who are potential cooperating agencies.

Among the activities and procedures utilized for accomplishing the project objectives were the selecting, abstracting and describing of

literature in the educational field. All abstracts and descriptors applicable to the needs of the elementary, secondary, and junior college education from the 1966 and 1967 issues of Research in Education were added to the Community Resources Center's data base. Additionally, the project abstractor wrote, descriptorized and coded abstracts of new books, papers and articles which the project acquisitioned. The abstracting of professional materials, particularly pamphlets, non-print and curriculum materials received by the Center continued to grow. Descriptors were assigned to books acquisitioned by the University of Colorado Education Library and complete Library of Congressional bibliographic data was included in the input to the system. Annotations, summaries and brief abstracts were added to the data base when appropriate. ERIC abstracts and locally written abstracts continued to be punched for both the BIRS and INFOL systems. In early September, keypunching of ERIC abstracts was decreased because the amount of input in the data base was considered sufficient for utilization during the pilot phase of the project. It was anticipated that the ERIC magnetic tapes would be available in July 1969 and would expand the data base.

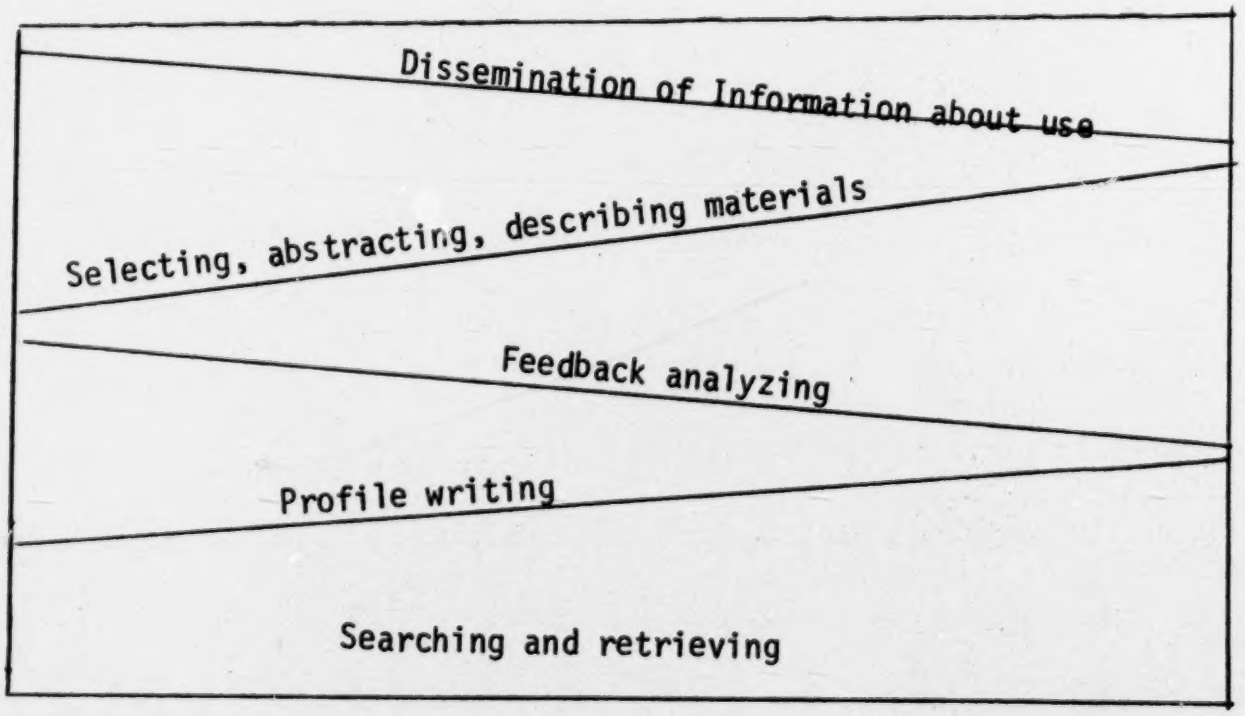
Dissemination of this information routinely to users according to their individual interests and needs was conducted through the Information Retrieval system. The number of requests for searches increased considerably, and information retrieval became more efficient as descriptors were applied more accurately. However manual checking was conducted on all print-outs and profiles as a form of final profile evaluation. Feedback from the users was further used to increase the accuracy of

match between their interests and needs and the abstracts and descriptions sent to them. Generic profiles based on commonality of interests were gradually compiled.

Use of the BIRS computer system was discontinued in preference to the INFOL system. Two of the major problems encountered with the BIRS system were the necessity to code descriptors manually and the limitation of types of retrieval. Despite the exactness and precision required by INFOL, its versatility, format, and lack of need for manual work made it a better tool for the project.

Instructional materials were selected by teachers, librarians and supervisors for use in the overall school curriculum. Descriptors of these materials, plus the Community Educational Resources and the field trip files, were added to the data base started the previous year.

Activities of the project were to develop concurrently and in the following relationship.



The Center's activities expanded in two directions. This included closer coordination with the Boulder Valley District Instructional Materials Center and more service to educators outside the school district. Experimentation with new techniques for input selection and abstraction as well as new techniques for automated dissemination of information were expected to be continued under the new grant.

On January 2, 1969, Mr. William H. McCleary was hired as Project Director. With the expansion of funding and services, the 3-member staff was increased to 10.

The manual search aspects of the project continued with the Reference Librarian providing information when no elements were available from the computer.

The community resources and human resources files were expanded and continued to gain information researched on businesses, individuals and government services in the local area.

Summary of 1969 Operational Grant

The Operational Grant for the Cooperative Community Educational Resources Center was funded for the period January 1, 1969 to December 30, 1969. The project, under this grant, was a continuation of planning and procedures established in the Pilot-Operational Grant of 1968. Two general objectives of the project were stated in the proposal: "(1) To keep educators aware of professional development and resources in the educational field by providing dissemination of current information according to needs and interests of users. (2) To provide educators with knowledge of the variety of instructional resources for individualizing the learning process. This Current Awareness service can be obtained on a routine or one-time basis."

The specific objectives of the project and the procedures for carrying them out can be arranged in four major categories of activities: On-going operations, expansion, experimentation and development, and evaluation.

On-going Operations

The main operations of the Center were the Current Awareness and Information Retrieval services. These were continued as adjusted and approved in previous grants and expanded to other users. Current Awareness users were to receive 10 monthly abstracts relating to their needs as indicated on an interest profile. However, the Current Awareness aspect of the Center was not fully developed. Reasons for this included the delay in obtaining ERIC tapes to fully expand the data bank, the excessive cost of retrieving stored information under the system used (CDC 3800 computer), and the emphasis in the project upon giving individual research and reference assistance to users. The Information Retrieval

System of the 1969 Grant was conducted as described in the first part of this chapter. The goal was to return requested information to the user within a period of 72 hours.

Computer and manual searches, as developed in previous grants, were continued. In order for abstractor and reference librarians to effectively interpret the user's question, it was considered necessary that they be familiar with the descriptor terminology used in the computer. Continuing emphasis was on the refinement of the descriptors and their use.

Information Retrieval services were available to users within the Boulder Valley School District and other schools, districts, and educational agencies, both in Colorado and other States. The Center obtained complete documents upon request for users within the Boulder Valley School District only. Requestors outside the District were encouraged to make contact with the Center through their curriculum director or the librarian in their district. Users contacted the Center through letter, telephone or in person.

Another on-going activity at the Center was the dissemination of information about its use. The Project Director gave project presentations to faculties acquainting them with the Center's services. At the end of this grant, 65% of the schools in Boulder Valley had been given a presentation. A newsletter about the project was expanded to include district librarians, and educational mediasts in each school who were designated as the project contact agents. A workshop was held in January 1969 for these contact agents. Dissemination was also accomplished through state-wide professional organizations.

Expansion

The Information Retrieval service was constantly being expanded to include other users through the methods of dissemination described above. The maximum goal set for the Center in the 1969 proposal was to handle an average of 350 profile requests per month for 10 months and unlimited manual search services. Boulder Valley teachers were to obtain up to 125 profiles per month while other Colorado users were not expected to request service as often.

The data base was to be constantly expanded through addition of abstracts from ERIC tapes and local sources abstracted at the Center. Criteria for selection of materials to be put into the data base included the availability of the source to the user.

Further development of the logic and listing capabilities of the INFOL 3000 series was carried out. However, the CDC 3800 computer, on which this system was based, was not considered completely satisfactory and other systems were investigated. The decision was made to lease a UNIVAC 9300 computer.

Experimentation and Development

This category included a variety of activities for improving and finding new uses for the services of the Resources Center. Of major importance was the continued development of descriptor terms and subject headings which accurately and precisely reported the content of the material. Concentration was also focused on developing new uses of the Current Awareness and Information Retrieval service for professional growth. Ideas for this included using the services as a source for articles in newsletters, for use of curriculum committees and for research design.

The use of the generic profiles was further developed. These profiles indicated the most commonly requested educational information reflecting the interests and concerns of teachers. The profiles could be used for newsletters, audio-tape programs and other activities to encourage professional growth.

Development of the Center's technical areas was attempted through investigation of other information retrieval centers for ideas which could be adapted.

Evaluation

Continuous on-going evaluation of the system was conducted by the staff. User-returned evaluation forms were sent out with each completed profile to assess the usefulness of materials. The Director made spot-checks of computer print-out profiles to insure that the materials were relevant to the requestors' needs. Interviews were conducted in October, 1968 by the team of Olson, Donohue, Lennox, Schmidt and Seager; another was conducted by the firm of Rouche', Ross, Bailey, and Smart in April, 1969. For details consult the 1970 Continuation Proposal.

Summary of 1970 Continuation Grant

The Continuation Grant for the Community Education Resources Center was funded for the period beginning March 1, 1970 and ending June 30, 1971. This project was a continuation of the previous Operational Grant with a few changes as noted below. On May 1, 1970, the Resources Center was incorporated under the Northern Colorado Board of Cooperative Educational Services (NCBOCES).

Three general objectives were recorded in the 1970 proposal, two being the same as the objectives stated in the 1969 proposal. The third objective was to provide educators with the opportunity to make requests for research materials related to specific curriculum areas or broad educational topics of interest. This was simply a further explanation of the basic project objective.

The specific objectives and procedures mentioned in the 1970 Continuation Grant were the same as those of the 1969 grant except for the following changes:

1. The turn-around time for returning profiles to users was to be changed from 72 hours to one week.

2. Greater emphasis was to be placed on refinement in the use of descriptor terms and abstract writing to provide more specific and detailed information to the user.

3. An additional evaluation of the project was conducted in November, 1969, by the team of Broderius, Stager, Yorke, and Zimmer.

4. The INFOL program used on the CDC 3800 computer was not considered satisfactory and a UNIVAC 9300 computer was to be leased for the 1970

Continuation Grant. A discussion of the reasons for this change can be found in the 1970 Proposal for Continuation Grant (pp. 22-23) and a description of the UNIVAC 9300 system in Appendix E of that same report.

The Resources Center constantly expanded its service to new users during the 1969-70 period. The greatest concentration of users was in Boulder County, but other counties in Colorado also employed the service frequently. At the time of the writing of the 1970 Continuation Proposal, the Center had made eight official and unofficial contracts and agreements for use of the Center with the educational agencies outside Colorado.

The foregoing sections sections describe the historical development of the Retrieval Center up to the time of the Human Factors Research Laboratory evaluation in July, 1970. The functioning of the Center during 1970-71 is described in the subsequent sections of this report.

II. Description and Analysis of Requests

To determine the types of requests for information forwarded to the Retrieval Center, the file for each request received since the Center's inception was consulted and the following data were recorded: Name of user, address, state or district in which the user lived, occupation or title of user, institution with which the user was affiliated, subject of request, date of request, processing time, type of information forwarded to user, reactions of user to the information, and additional comments on the user evaluation form return to the Center. This information was obtained on 2,977 requests. The data for each request were then coded according to the code sheet shown in Appendix B. Inspection of the coding key reflects the nature of the variables on which the requests were to be analyzed. Two classifications for subject of request were used, the first a classification designed by the Project Director consisting of eight categories, and the second a classification suggested by the ERIC Centers established throughout the United States. All subject classifications were made by the Project Director.

In Table 1 are shown the requests classified by state or district. Inspection of this Table reveals that the largest number of requests was made by personnel in the Boulder Valley Public Schools and the second largest number by personnel in Colorado, not residing in the Northern Colorado BOCES. The largest number of requests from states outside Colorado included Washington and South Dakota.

Table 1

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by State or District

No. of Requests	%	State or District
1,018	34.96	1. Boulder Valley Public Schools RE-2J
19	0.65	2. Westminster, Adams 50 School District
98	3.37	3. Thornton-Northglenn, Eastlake, Adams 12
16	0.55	4. Loveland (Big Thompson), Larimer R-2J
63	2.16	5. Fort Collins, Poudre, Larimer R-1
51	1.75	6. Longmont, St. Vrain Valley, Boulder RE-1J
16	0.55	7. Estes Park, Larimer R-3
457	15.68	8. Colorado, not in NCBOCES
50	1.72	9. Nevada
311	10.68	10. South Dakota
354	12.16	11. Washington
62	2.13	12. Oregon
225	7.73	13. Utah
51	1.75	14. Wyoming
121	4.16	15. All other states
2,912	100.00	Total

In Table 2 are shown the occupations or titles of the requestors. Here it can be seen that the largest number of requests came from specialists, coordinators, directors and consultants. As a group these individuals might be classified as change agents in their various professional capacities. Teachers at the elementary, secondary and college level reflected the next largest number of requestors, followed by administrators as a group. It is conceivable that these two categories of requestors represent underestimates because of having submitted their requests through various specialists. It is apparent, however, regardless of the possible underestimation, that primary use of the Center was by educational practitioners rather than by individuals outside school positions. It should be noted that Table 2 is based on requests rather than users per se and that one user may have made more than one request.

The type of institution with which requestors are identified is shown in Table 3. District Administrative Units represented the largest category of requestors followed by junior high and high school combined.

In Table 4 are shown the number of requests by date of request in six month intervals. From this table the steady, albeit rapid, growth of the use of the Center is apparent. A pronounced increase in use of the Center can be seen during 1969 and 1970.

Processing time for requests is also shown in Table 4. The mean processing time for the computer searches is somewhat less than that for the manual searches.

Table 5 contains the number of requests by type of profile issued to requestors. The effectiveness of the computer is reflected throughout the entries in the table.

Table 2

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Occupation or Title

No. of Requests	%	Occupation or Title
114	4.30	1. Student
199	7.51	2. Teacher, Elementary
321	12.10	3. Teacher, Secondary
98	3.70	4. Teacher, College or University
263	9.91	5. Librarian
1,033	39.00	6. Specialists, Coordinators, Directors and Consultants
95	3.57	7. Pupil Personnel--Counselor, Psychologist, School Nurse
233	8.79	8. Administrator - Principal
194	7.30	9. Administrator - Superintendent
20	0.76	10. Layman
52	1.96	11. Other
27	1.10	12. Teacher - Special Education
2,649	100.00	

Table 3

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Type of Institution

No. of Requests	%	Type of Institution
467	16.39	1. Elementary School
682	23.95	2. High School, Jr. High
294	10.32	3. College or University
233	8.19	4. State Department of Education
82	2.88	5. Research Organization
791	27.77	6. District Administrative Unit
7	0.25	7. Teacher Training Institution
193	6.78	8. ERIC and other Resource Centers
83	2.91	9. Other
16	0.56	10. Special Education Institution

Table 4

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Date of Request

No. of Requests	Date of Request
4 (0.14%)	Prior to 1968
86 (2.95%)	January to June, 1968
77 (2.64%)	July to December, 1968
227 (7.79%)	January to June, 1969
459 (15.76%)	July to December, 1969
502 (17.23%)	January to June, 1970
1,558 (53.49%)	July to December, 1970
2,913	

Mean Processing Time

Mean Computer Processing Time (N=2158)	18.48 days
(Standard Deviation)	(11.470)
Mean Manual Processing Time (N=1012)	20.56 days
(Standard Deviation)	(16.741)

Table 5

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per Type of Profile Sent

No. of Requests	Type of Profile
994 (36.91%)	Current Interest only (Computer)
46 (1.71%)	History only (Computer)
365 (13.55%)	Manual Search only
414 (15.37%)	Current Interest and History only (Computer)
638 (23.69%)	Current Interest and Manual Search
9 (0.33%)	History and Manual Search
227 (8.44%)	Current Interest, History and Manual Search
2693	

Reactions to materials forwarded to the requestors by the Center is shown in Tables 6-8. Whereas many evaluation forms were not returned by the users, it can be seen that the majority of the reactions were favorable to the Center. More than half of the respondents indicated that the materials were pertinent and that they would be willing to pay for services on a cost-per-profile basis.

In Table 9 are shown the number of requests according to the Human Factors Research Laboratory (HFRL) subject code. Most popular subject of requests was the Administrative Procedures and Organization category. This category included such requests as open scheduling, merit pay, contract negotiations and school finance. The category, "Instructional Procedures and Techniques," was the second most popular. This category included such topics as the project method of teaching, computer assisted instruction, and pupil participation in learning. Inspection of Table 9 reflects the nature of the jobs held by the requestors, shown earlier.

In Table 10, the requests have been categorized according to the ERIC subject code. Here it can be seen that administration again ranks high followed by Library and Information Services and Counseling and Student Personnel Services. In the ERIC subject code, requests are classified according to the specific content of subject matter, a factor not shown in the HFRL classification. Cross classifications of requests by the ERIC subject code Reading, ERIC subject code Educational Administration, and HFRL subject code Curriculum Development, HFRL subject code Instructional Procedures and Techniques, and HFRL Administrative Procedures and Organization are shown in Appendix C.

Table 6

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per Answer to Question #1
on Evaluation Form

Were the abstracts in this profile pertinent to your request?

No. of Requests	Answer
65 (17.57%)	100%
140 (37.84%)	75%
48 (12.97%)	50%
101 (27.30%)	25%
16 (4.32%)	0%

Table 7

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per Answer to Question #2
on Evaluation Form

Were the Manual search materials in the profile pertinent?

No. of Requests	Answer
86 (42.57%)	100%
62 (30.69%)	75%
13 (6.44%)	50%
28 (13.86%)	25%
13 (6.44%)	0%

Table 8

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per Answer to Question #3
on Evaluation Form

Would you be willing to pay for educational information retrieval services on a Cost-Per-Profile basis?

No. of Requests	Answer
307 (87.71%)	Yes
43 (12.29%)	No
350	

Additional Comments on Evaluation Form

No. of Requests	Comment
147 (61.51%)	Generally positive
30 (12.55%)	Positive with reservations
35 (14.64%)	Negative
28 (11.71%)	Neutral
239	

Table 9

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per HFRL Subject Code

No. of Requests	%	Subject of Requests
399	13.46	1. Curriculum Development
340	11.47	2. Pupil Characteristics, Behavior, Guidance
618	20.84	3. Instructional Procedure and Techniques
833	28.09	4. Administrative Procedure and Organization
106	3.58	5. Teacher education, pre and in-service
273	9.21	6. Subject matter topic
134	4.52	7. Special Education
262	8.83	8. Instructional Resources, Research
0	0.00	9. Other
2965	100.00	

Table 10

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests Per ERIC Subject Code

No. of Requests	%	Subject of Request
7	0.24	1. Adult Education
245	8.26	2. Counseling and Student Personnel Services
50	1.69	3. Disadvantaged
47	1.59	4. Early Childhood Education
978	32.98	5. Educational Administration
105	3.54	6. Educational Media and Technology
123	4.15	7. Exceptional Children
21	0.71	8. Higher Education
9	0.30	9. Junior Colleges
255	8.61	10. Library and Information Services
12	0.40	11. Linguistics
147	4.96	12. Reading
11	0.37	13. Rural Education & Small Schools
205	6.92	14. Science and Mathematics Education
105	3.55	15. Teacher Education
92	3.10	16. Teaching of English
26	0.88	17. Teaching Foreign Languages
105	3.54	18. Tests, Measurements and Evaluation
146	4.92	19. Vocational and Technical Education
222	7.48	20. Social Science Education
53	1.79	21. Music, Art and Humanities Education
2965	100.00	

Additionally, cross classifications were made by the seven Colorado school districts in the NCBOCES and the various states participating in the Center's activities. Tables reflecting these data are shown in Appendix C.

In summary, those requesting information from the Retrieval Center tended to be active educational practitioners, were more frequently from the states of Colorado, South Dakota, and Washington, were highly favorable toward the service of the Center, and tended to request topics related to Educational Administration, Instructional Techniques, and Curriculum Development.

III. Reaction of 1970 Users

Whereas it was possible to obtain a preliminary indication of user reaction to the Center through the standard evaluation form sent to users with requested information, it was considered desirable to study user reaction in greater depth for the contracted evaluation. A comprehensive user questionnaire was constructed to assess in-depth reaction for distribution to a sample of those requesting information from the Center during 1970. The objectives on which the content of the questionnaire were based included purposes for use of the material requested, source of information about the Center, reaction to the materials provided by the Center, information about educational practices related to the material requested, and demographic data of the users. The questionnaire which was developed to assess user reaction is shown in Appendix D. Since the questionnaire was to be mailed to the user sample, an effort was made to present the items in as efficient a format as possible.

Review of the user information from the Center's files reveals that 1,088 separate individuals had requested information from the Center during 1970. The total population of 1970 users was divided according to geographic location so that a stratified sample could be drawn for the evaluation. Distribution of the population according to strata and the sample which was drawn from it are shown in Table 11. Here it can be seen that a 20% sample stratified according to geographic area was drawn for the evaluation. The questionnaires were mailed to the sample and were

Table 11

User Questionnaire - Sample Distribution

Response	No. of 1970 Users		Sample	No. Returned	
	f	%		f	%
Boulder Valley Public Schools RE-2J	207	19.1	40	34	20.5
Westminster, Adams 50	4	.4	1	1	.6
Thornton-Northglenn, Eastlake, Adams 12	42	3.9	9	7	4.2
Loveland (Big Thompson), Larimer R-2J	13	1.2	2	2	1.2
Fort Collins, Poudre, Larimer R-1	20	1.8	4	2	1.2
Longmont, St. Vrain Valley, Boulder RE-1J	20	1.8	4	3	1.8
Estes Park, Larimer R-3	10	.9	2	1	.6
Colorado, not in NBOCES	183	16.8	34	23	13.9
Nevada	23	2.1	4	3	1.8
South Dakota	138	12.7	28	18	10.8
Washington	166	15.3	37	31	18.8
Oregon	44	4.0	9	9	5.4
Utah	144	13.2	27	19	11.4
Wyoming	26	2.4	7	4	2.4
All other States	48	4.4	10	9	5.4
Total	1088	100.0	218	166*	100.0

*76.1% of questionnaires mailed were returned.

followed by postal card reminders to return completed questionnaires four weeks following the sample mailing. As a result of this approach, 76.1% of the questionnaires were returned. This percentage of returns was considered highly satisfactory for purposes of the evaluation. (The 24.9% of non-returns included some faulty addresses and some who felt unqualified to respond to the questionnaire since they had used the Center only once.)

In evaluating the validity of the sample distribution, it was noted that some distortion may have occurred in that the questionnaire may have gone to a contact person rather than to the actual user. Such situations were exceptional, however, and it is felt that this circumstance did not affect results appreciably.

Responses to the completed questionnaires were coded and key punched directly from the completed questionnaires. Responses to open ended questions were recorded verbatim for separate study and analysis. Analyses of questionnaire responses were made according to total sample, geographic area, occupation, and years of professional experience. It was felt that these analyses would provide maximum insights as to reactions of users generally as well as specifically.

In Table 12 are shown the occupations of individuals using the Center in 1970. It should be noted that entries in this table as well as those which follow represent specific individuals rather than requests (in contrast to the analyses in the previous chapter). Thus, the characteristics reflected in the 1970 user sample can be considered relatively accurate. Inspection of Table 12 reveals that specialists (change agents) constituted the largest group of users followed by elementary and secondary school teachers and administrators. In comparison to the request analysis of the last chapter, the 1970 user data suggest that about the same proportion of

Table 12

Responses to User Questionnaire

Number of Questionnaires Returned by Occupation

No. Returned f	%	Occupation
10	6.0	1. Student
14	8.4	2. Teacher, Elementary
24	14.4	3. Teacher, Secondary
12	7.2	4. Teacher, college or university
9	5.4	5. Librarian
56	33.5	6. Specialist, coordinator, director, consultant, research specialist
5	3.0	7. Pupil Personnel, counselor, psychologist, school nurse
19	11.4	8. Administrator - Principal
6	3.6	9. Administrator - Superintendent
0	0	10. Layman
10	6.0	11. Other
2	1.2	12. Teacher, special education
167	100.1	Total

teachers requested information in 1970 as in previous years. This situation is probably associated with the need for more dissemination efforts by Center personnel to encourage teachers to participate in Center utilization.

In Table 13 are shown the 1970 users by years of professional experience. A curvilinear relationship between proportion of users and length of experience is apparent from inspection of this table. Individuals with more than 15 years experience tended to use the Center less frequently than those with fewer years experience. It is probable that use of the Center as an innovative approach to education is tied to recency of training, level of responsibility and interest in and willingness to modify current practice.

Purposes for which the services of the Center were used are shown in Table 14. Inspection of this table indicates that research was the major purpose. In preparation of the Questionnaire, "research" was not defined per se, and it is difficult to know how the respondents interpreted the term. Assuming that their interpretation of research was broad, curriculum revision, general knowledge about a subject area, and methods of classroom instruction were the most popular utilization.

Source of information about the Center is shown in Table 15. It is apparent that direct contact with professionals through presentations by resource center personnel and through work association is a major factor in dissemination of information about the Center. Newspapers, bulletins, and newsletters played a relatively small role as sources of information.

The effectiveness of information provided by the Center is shown in Table 16. Here it can be seen that more than 80% of the users responded that the material was moderately useful or more useful.

Table 13

Responses to User Questionnaire

Number of Questionnaires Returned by Years of Professional Experience

No. Returned f	%	Years Professional Experience
25	15.0	Less than 5 years
31	18.6	5-9 years
43	25.7	10-14 years
35	21.0	15-19 years
19	11.4	20-24 years
14	8.4	More than 25 years
167	100.1	Total

Table 14

Responses to User Questionnaire

Question 1: Please check the main purpose(s) for which you used the services of the Resources Center.

No. of Responses	%	Response
53	16.8	1. General knowledge about subject area
72	22.9	2. Research
14	4.4	3. Assignments and term papers
9	2.9	4. Preparation or updating of course bibliographies
48	15.2	5. Curriculum revision
17	5.4	6. Preparation of a speech or report
51	16.2	7. Methods of classroom instruction
32	10.2	8. School administration problems
19	6.0	9. Other
315	100.0	Total

Table 15

Responses to User Questionnaire

Question 2: Where or how did you first hear about the services of the Resource Center?

No. of Responses	%	Response
58	29.4	1. Work associates
4	2.0	2. Newspaper
15	7.6	3. Bulletins and Newsletters
22	11.2	4. Staff meeting
61	31.0	5. Presentation by Resource Center Personnel
37	18.8	6. Other
197	100.0	Total

Table 16

Responses to User Questionnaire

Question 3: How useful have you found the information provided by the Information Retrieval Center?

No. of Responses	%	Response
13	7.9	1. Not useful
17	10.3	2.
43	26.1	3. Moderately Useful
41	24.8	4.
51	30.9	5. Very useful
165	100.0	

Mean Response: 3.606

Standard Deviation: 1.239

Pertinence of the material is reflected in Table 17. Again, more than 80% indicated that the computer profiles were pertinent and more than 70% indicated that the manual search materials were useful. These two percentages would be even higher if the computation of favorable responses were based on reactions with "not applicable" responses eliminated.

In Table 18, responses to the availability of information received are shown. Almost 90% of the respondents indicated that the material received from the Center would not have been available to some degree. There was an apparent overlap of only 10% between available material and that forwarded by the Center.

To assess the availability of materials useful in analyzing information from the Center, respondents were asked to specify the kinds of materials and equipment most lacking in their work situation. It can be seen from Table 19, in which responses to this question are shown, that the microfiche reader, reader-printer, and duplicator were most frequently lacking. It is interesting to note that almost 20% of the users indicated that they lack adequate library facilities close to their working situation.

Problems encountered by the respondents were shown in Table 20. Inspection of this table reveals that 17% encountered no problems, about 14% found information not pertinent to their request, and 13% indicated that their request took too long to process. Profile too general and microfiche reader not generally available were indicated as problems by 12% and 10% respectively. In general, the data in Table 20 showed a surprisingly low incidence of problems encountered by the users.

In Table 21, suggestions for improving the Center's services are reflected. Inspection of this table reveals that expansion of the data

Table 17

Responses to User Questionnaire

Question 4: Have the abstracts in the profiles (computer) and the manual search materials sent you usually been pertinent to your request?

Computer Abstracts

No. of Responses	%	Response
120	83.3	Yes
15	10.4	No
9	6.3	Not Applicable
144	100.0	Total

Manual Search Materials

No. of Responses	%	Response
87	71.3	Yes
7	5.7	No
28	23.0	Not Applicable
122	100.0	Total

Table 18

Responses to User Questionnaire

Question 5: Which one of the following statements best describes the information you have received from the Center?

No. of Responses	%	Response
8	5.0	All the information I received would not have otherwise been available.
83	51.9	Most of the information I received would not have otherwise been available.
52	32.5	Some of the information I received would not have otherwise been available.
17	10.6	Essentially, all of the information I received would have otherwise been available.
160	100.0	Total

Table 19

Responses to User Questionnaire

Question 6: Which of the following materials or equipment are most lacking in your work situation?

No. of Responses	%	Response
55	21.3	Microfiche reader
53	20.5	Microfiche reader-printer
59	22.9	Microfiche duplicator
41	15.9	Government reports
50	19.4	Adequate library facilities close by
258	100.0	Total

Table 20

Responses to User Questionnaire

Question 7: Which, if any, of the following problems have you encountered in using the services of the Resources Center?

No. of Responses	%	Response
30	12.0	Profile too general
13	5.2	Too much information to wade through
35	14.1	Information not pertinent to request
24	9.6	Too little information
17	6.8	Complete documents (hardcopy or microfiche) not available
26	10.4	Microfiche reader not readily available
33	13.3	Took too long to process request
17	6.8	Confusion as to what kind of information the Center can provide
43	17.3	No problems were encountered
11	4.4	Other
249	99.9	Total

Table 21

Responses to User Questionnaire

Question 8: Rank the following suggestions for improving the Center's services by placing "1" beside the most needed, "2" beside the next most, etc., and "5" beside the least needed improvement.

Response	Rank: 1 f	1 %	2 f	2 %	3 f	3 %	4 f	4 %	5 f	5 %	Mean Rank
More specific request forms (n=111)	26	23.4	13	11.7	22	19.8	20	18.0	30	27.0	3.135
More accurate computer search (n=102)	14	13.7	10	9.8	14	13.7	34	33.3	30	29.4	3.549
Shorten the processing time of requests (n=114)	32	28.1	19	16.7	19	16.7	18	15.8	26	22.8	2.886
Provide more expanded subject area coverage (n=116)	36	31.0	33	28.4	30	25.8	10	8.6	7	6.0	2.302
Keep expanding and updating the data base (n=123)	53	43.1	36	28.5	13	10.6	14	11.4	8	6.5	2.098

base was considered the most critical suggestion followed by shortening of the processing time. Accuracy of computer search and specificity of request forms were considered least critical suggestions. It is interesting to note in interpreting these results that the users were concerned with general concepts rather than mechanics in making their suggestions.

Responses to six Likert-type items are shown in Table 22. Here it can be seen that the users were generally favorable toward the Center with very small percentages of responses to be found in the unfavorable range of response continuum.

In categorizing the instances cited where information from the Center had contributed to changes in programs and practices, the Human Factors Research Laboratory classification of topics was used. From Table 23, it can be seen that curriculum development, instructional procedures and techniques, and administrative procedure and organization were most frequently cited as areas of impact through Center utilization. These results parallel those of the analyses of type of requests, an observation which supports the validity of both sets of data.

Overall, analyses of the user reaction during 1970 reflected highly favorable response to the Center. When it is recalled that the questionnaires were returned to an outside agency, were anonymous, and provided opportunity for negative reactions to be recorded, it can be concluded that response to the Center's operation during 1970 was highly favorable.

Additional analyses were made of the 1970 user reactions according to geographical area, occupation, and years of professional experience as cross classification variables. These analyses will provide the reader with very meaningful, specific interpretations of reaction and can be found in Appendix E. Review of the responses by geographic area reveals

Table 22

Responses to User Questionnaire

Attitude Scale

Question	No. of Responses SA(1)	A(2)	N(3)	D(4)	SD(5)	Mean Score
10. The Retrieval Center has been a real help to me.	56	63	26	11	5	2.04
12. The Retrieval Center should be continued and expanded	94	52	11	3	3	1.58
14. The idea behind the Retrieval Center is a good one	113	37	6	3	1	1.39
15. Children are benefiting because of the existence of the Retrieval Center.	37	57	57	6	3	2.26

	SA(5)	A(4)	N(3)	D(2)	SD(1)	
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center.	4	8	19	50	81	1.79
13. The Retrieval is of questionable value. . . .	1	10	14	53	83	1.71

Mean Total Attitude Score* for Entire Sample: 10.801
Standard Deviation 4.023

*Total Attitude Score = Sum of Score on each question. Possible range of 6-30 with 6 being most positive score and 30 being most negative score.

Table 23

Responses to User Questionnaire

Question 9: Can you cite any instances where information from the Resources Center has contributed to changes in programs and practices? (Responses categorized according to purpose for which information was used.)

Purpose Category	f	%
Curriculum Development	21	33.9
Pupil Characteristics, behavior, and guidance	5	8.1
Instructional Procedure and Techniques	9	14.5
Administrative Procedure and Organization	7	11.3
Teacher Education, pre and in-service	3	4.8
Subject matter topic	6	9.7
Special Education	4	6.4
Instructional Resources, Research	2	3.2
Other	5	8.1
Total programs named	62	100.0

major differences between users in Colorado and those outside Colorado, with Colorado users being more favorable. For example, Colorado users responding no problems encountered were 25% versus 12% outside Colorado, and the mean attitude scale score for Colorado was 10.29 versus 11.16 outside Colorado. Analyses of the responses by occupation categories indicated that non-administrators used material received for classroom instruction improvement in contrast to administrators who used the Center for solving school administration problems and curriculum revision. Non-administrators tended to be less favorable toward the Center than administrators. Interestingly, administrators with more years of professional experience who used the Center tended to be slightly more favorable than those with less years of professional experience even though they used the Center's services less frequently. Apparently, the highly experienced educators who do use the Center are those who have a high appreciation of the innovation that the Center's concept represents. Verbatim responses to the open section of the various questions are shown in Appendix F. Perusal of these responses indicates a close parallel to the results obtained in the objective portions of the questionnaire.

NCBOCES District Interviews

Administrators in the seven school districts comprising the Northern Colorado Educational Board of Cooperative Services were interviewed in November or December, 1970, and again in April or May, 1971. Fifteen administrators were interviewed in the Fall and eight in the Spring. Interview schedules for both sets of interviews are shown on the following pages.

The purpose of these interviews was to obtain information about the reaction of users in each district to the service, to find out how the user system is organized in the districts, and determine what problems were being encountered with the service. An attempt was also made to determine what effect the Retrieval Center service is having on educational practice in the districts. It was very difficult for administrators to pin-point the impact of information received from the Center, however, and only a sketchy and subjective estimate of impact was obtained from the interviews. The following paragraphs include separate discussions of the Fall and Spring interview responses and a summary of all responses.

Fall Interviews

Organization of the User System in the Districts

Organization of the user system varies in each of the seven districts. In most districts there is a central office or contact person who takes requests from users. This may be the instructional media center (2 districts), the elementary or secondary directors (2 districts), the assistant superintendent (1 district), or the principal (1 district). This contact person then mails or phones the requests to the Center. In some cases, Retrieval

Evaluation of NCBOCES Information Retrieval

Fall Interview Schedule

ame	Title	Date of Interview	Interviewer(s)
laude Stansberry	Superintendent, Thompson R-2J (Loveland)	17 Nov, 2:00 p.m. (pilot)	Schwartz and James
. L. Schmelzer	Asst Superintendent, Poudre R-1 (Ft Collins)	18 Nov, 1:00 p.m. (pilot)	"
obert Turner	Asst Superintendent, Thompson R-2J (Loveland)	23 Nov, 3:30 p.m.	"
r. John Stephens	Superintendent, St Vrain (Longmont)	9 Dec, 9:30 a.m.	"
ack Pope	Asst Superintendent of Instruction, St Vrain	9 Dec, 10:30 a.m.	"
ordon Rudel	Principal, Jr/St High School Estes Park	11 Dec, 9:00 a.m.	"
ather Patterson	Superintendent, Estes Park	11 Dec, 10;00 a.m.	"
r. I. K. Boltz	Superintendent, Poudre R-1	11 Dec, 1:30 p.m.	"
oble Freden	Consultant, Educational Media Boulder Valley	15 Dec, 10:45 a.m.	Schwartz
r. B. Ryan also Mr. Gulette nd administrators)	Superintendent, Boulder Valley	15 Dec, 2:40 p.m.	Schwartz and James

ıme	Title	Date of Interview	Interviewer(s)
·. Bostrom	Asst Superintendent, Adams 50 (Westminster)	17 Dec, 8:00 a.m.	Schwartz and James
lice Spangler	Library Consultant, Adams 50	17 Dec, 8:30 a.m.	"
ırtin Schmidt	Title III Director, Adams 12 (Eastlake)	17 Dec, 10:00a.m.	"
ıniel B. Stukey	Superintendent, Adams 12	17 Dec, 11:00 a.m.	"

Interview Schedule - Spring

Interviewer: J. James

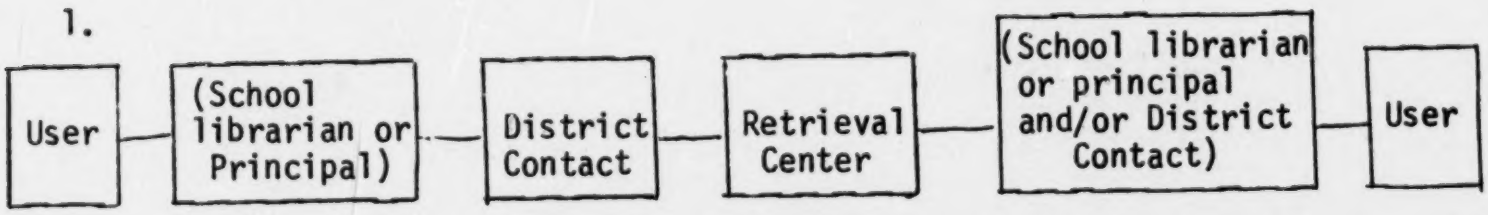
Name	Title	Date of Interview
P. L. Schmelzer	Assistant Superintendent Poudre R-1 School District	April 20, 1971
A. Spangler	Library Consultant Adams 50 School District	April 22, 1971
G. Rudel	Principal, Jr/Sr High School Estes Park	April 23, 1971
N. Freden	Educational Media Consultant Boulder Valley Public Schools	April 26, 1971
A. Reuter	Assistant Superintendent Adams 12 School District	April 27, 1971
R. Turner	Assistant Superintendent for Secondary Instruction Thompson R-2J School District (Loveland)	April 29, 1971
C. Bergman and I. Peterson	Secondary Director and Elementary Director St. Vrain RE-1J School District (Longmont)	May 3, 1971

Center staff call the district on a regular basis to collect requests. Returning requests are either channeled back through the contact person or directly back to the user. Reasons given for channeling requests through a central office included enabling the district to collect evaluative data about requests and preventing duplicate requests.

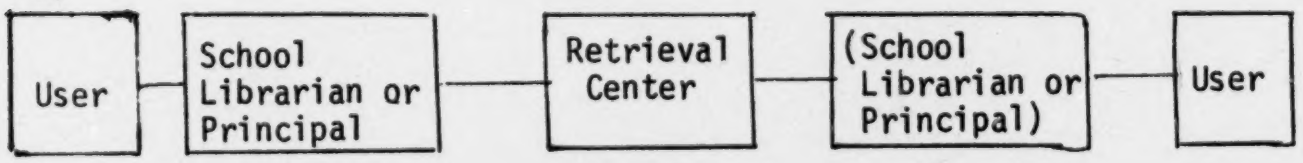
In two districts, users are encouraged to call the Retrieval Center directly, or they may go through an intermediary at their own school such as the librarian or principal.

From the foregoing, three different methods of routing requests used in the seven districts can be charted. (Steps in parentheses indicate alternate routings)

1.



2.



3.

Some districts may use more than one system. System 1 is the most frequently used method of routing requests in the NCBOCES.

Problems Encountered with the System

Five of the 15 administrators interviewed indicated that no major problems had been encountered up to that time. The most frequently cited problem was keeping users aware of the availability of the Center. This was thought to be a continuous problem that should be accomplished through both personal presentations to school staff and written literature. Several other problems were cited related to user training. These included difficulty of users to specifically delineate the request so as to receive a pertinent profile, lack of knowledge about or negative attitude toward the microfiche system, and little knowledge about following up requests to obtain hard copy or microfiche.

Some complaints about the turn-around time were noted by the educators interviewed. However, some users were suprised by the speed of the service. Reactions to the turn-around time depend upon the expectation of the users.

Suggestions for Improving the Center

In response to the question, "Do you think the operation of the Retrieval Center can be improved? If so, how?" the administrators responded with several suggestions, which are described below:

1. The data base should be continuously expanded and updated. Information about local resources would be very valuable.

2. A Watts telephone line from the district to the Center would enable requests to be made more efficiently and economically.

3. Several educators made suggestions regarding training of users.

They felt that users should be encouraged to use the follow-up phase of the service. A tape or film to be used by the districts at staff meetings was seen as having the best potential for training users by many. Another administrator suggested a 1-page bulletin be prepared telling users what the Center can do for them and how to contact the Center.

4. One administrator suggested that the profiles be reviewed by the Retrieval Center staff who would made evaluative comments for the user concerning the adequacy of the search and perhaps making suggestions as to other avenues of approach not available through the Center that the user could himself pursue. He felt that the personal experience and expertise of the staff was an asset that should be exploited along with the information available from the Data Base itself.

5. Attempts should be made to shorten the turn-around time as much as possible.

Availability of Microfiche equipment

Two of the seven districts indicated that no microfiche readers were available in their district. These districts were, however, able to borrow the portable readers from the Retrieval Center. The other districts had one or more regular or portable readers available for use in their districts. Some districts had one central microfiche printer (hardcopy from microfiche). All districts felt that their facilities for use of the microfiche system were inadequate.

Impact of Information from the Retrieval Center

When asked if they could identify programs that had been started or changed as a result of the use of the Information Retrieval Center, many

educators said this was difficult to assess. Some felt that the use of the Center had not been long enough for any impact to be felt. Others were able to identify programs where information had been requested and received. A few projects were identified where information from the Center had been used in finding solutions to the problem. Most of these projects involved curriculum planning.

Response of Users to the Services

All the administrators interviewed felt that the overall reaction of users with whom they had contact was very favorable. Many expressed the wish that their district make more extensive use of the services available. They mentioned that the Retrieval Center staff had been most cooperative and helpful. One administrator noted an overall attitude change on the part of many of his staff--he felt that the service had enriched the outlook of the staff and increased their ability to promote change.

Overall, the educators interviewed were very pleased with the service provided by the Retrieval Center and enthusiastic about its potential for promoting educational change. Some felt that their districts had not had long enough use of the Center to adequately describe its effect. Some problems were encountered with the microfiche system because of lack of readers and reluctance on the part of the users to use the microfiche. Educators also saw the need for continuing dissemination of information about use of the Center to users and made suggestions as to how the Retrieval Center could aid the districts in accomplishing this goal. A few problems were encountered in not properly wording requests resulting

in inacurate profiles being returned. This was seen as a problem in user education and the request taking process.

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Spring Interviews

Organization of the User System in the Districts

Little change in the system of routing requests was noted in the districts since last Fall. Two districts were planning to make minor changes in their system. One change involved making the school librarians the primary user contacts with the district media center forwarding and keeping evaluative records on requests. Previously in this district, requests went from the user to the media center. The other district planned to changed the contact office from the assistant superintendent's office to the district media center.

There were two levels of district user contacts in the systems employed by the seven districts: 1) an administrative contact for the entire district such as the elementary or secondary director, assistant superintendent, or media center; and 2) a school contact such as the librarian or principal. Some districts channeled requests through both contacts and some through only one.

Five of the seven districts routed requests through a central district administrative contact. Two reasons for this centralization were frequently given: 1) So that evaluative information regarding number of requests and type of requests could be collected. In districts where returning requests were also routed through the central office, it was felt that the district should evaluate the turn-around time and quality of profiles. One administrator felt that purchase of district professional materials would be facilitated by examination of the type of requests sent to the Center. 2) Many districts mentioned the desire to prevent duplicate requests being sent to the Center from their district. This would avoid placing an unnecessary work load on the Retrieval Center staff.

In two districts, users contacted the Center directly or through the school contact. In one of these districts the administrator interviewed felt that a central coordinating office would be a good idea, but stated the district lacked the staff to provide such coordination. In the other district, it was felt that the advantages of evaluation gained by routing requests through a central office were offset by the delay and possible loss of meaning.

One administrator observed that there were two peak periods for use of the Center. One was from October to January when new programs and methods were being tried out, and the other was during the summer when curriculum and other committees were at work.

Suggestions of the administrators concerning the ideal method of routing requests are related in the section under "Suggestions for Developing a Model for Organization of the User System."

Reaction of Users to the Services Provided by the Resource Center

Administrators in the seven districts indicated that the overall reaction of users to the service was very favorable. Some users were quite enthused about its possibilities. Some others had made complaints about the service, and three of the administrators felt that these arose because the users did not fully understand the nature of the Retrieval Center Service.

In most districts, not enough use had been made of the newly introduced products (CAT, CAP and PET) to provide evaluative information. However, two administrators personally felt that these products would be an improvement in the service. They felt the catalogs particularly would stimulate requests from teachers. One administrator felt that information about the new products had not been well received in that district because it was too complicated and suggested that a more simple explanation of the products would be useful.

Problems Encountered with the System

As a result of interviews with administrators in the seven districts, three main problem areas were identified. It should be noted that all of the administrators were very pleased with the service and cooperation provided by the Retrieval Center staff. Three administrators indicated that no important problems had developed so far. The problems that were identified were difficulties within the districts in administering the service to the users. The areas identified by the administrators as needing improvement were as follows:

1) Dissemination of Information About the Service.

Three administrators indicated their major problem was how to inform potential users about the service. This response was noted both from districts who had had extensive use of and districts who were comparatively new to the service. The administrators felt dissemination of information about the service should be a continuing process or users forget about its possibilities. The administrators did not feel that users' merely being aware of such a service was adequate, but felt that information about the service should be related to specific needs of the users; and furthermore, users should be made aware of what the data base contains, what are its limitations and what kind of information is obtained. Further discussion of this problem and suggested solutions is contained in the section "How Potential Users are Informed of the Availability of the Center."

2. Difficulty in Properly Delineating Requests.

The second problem area identified by three administrators was the difficulty of many users to properly identify their requests. Many times users would fail to give a specific enough description and receive far too broad a profile. Other times they would give an ambiguous description and receive a profile that was not pertinent. An example given by one administrator was a request for information on "ungraded" schools. This could

mean no achievement grades are given, such as A's, B's, C's, D's, and F's, or it could mean a continuous progress school where there are no grade levels, such as 1st grade, 2nd grade, etc.

The administrators could not give specific suggestions for training users so they would be able to place appropriate requests. One suggested that it would be helpful if the BOCES request forms were designed in such a way as to force the users to be specific. For example, he suggested there could be a place to describe for what purpose the user planned to utilize the information. Another administrator indicated that he encourages district users to follow-up their request through regular district channels with a phone call direct to the Center. He felt that the Retrieval Center staff could best quiz the users and determine the best descriptors.

3) Microfiche System:

The Microfiche system was cited as a major problem within their district by four administrators. In these districts, the lack of microfiche readers discourages many users from placing follow-up requests. One administrator felt the problem was two-fold: 1) Lack of readers conveniently available to users, and 2) negative attitude on the part of users toward the microfiche system. Other administrators also indicated that users would much prefer to read hard-copy than microfiche because they felt the microfiche system was a lot of trouble and hard on the eyes.

Another administrator suggested that BOCES place more emphasis on the follow-up process as being the end product rather than the print-out, which he felt was only a tool in the information retrieval process. Several administrators mentioned that some users expect the print-out itself to have the answers to their problems.

When asked where the primary responsibility for improvements related to the three problem areas rested--with the district or the Retrieval Center--the administrators were not sure, but most felt that it was a joint problem. They indicated the Retrieval Center staff could help by providing suggestions and materials with which the districts can better administer the system.

One administrator had a suggestion concerning the introduction of new services such as CAT, CAP and PET. New services, he felt, should be fully operational when introduced or a date should be set when requests for the new services can be handled. In that district, the reputation of the Retrieval Center had suffered when some users did not receive good service on the new products as they were first being set up.

Overall Impact of the Center on Educational Practices

Five of the seven administrators interviewed stated that assessment of the impact of information on educational practice was extremely difficult to measure; four added that, if it were to have an impact, it would take more time than has so far elapsed since use of the Center began. Several were able to identify programs for which information had been requested, but they were unable to say whether the information had been read and whether it had affected any decisions about the programs.

Two district administrators could identify programs which information from the Retrieval Center had helped to develop. In one district, information from the Center had been used in curriculum planning. In another district, two areas of impact were noted: 1) curriculum change. One program in particular was described where educators observed a problem in the district and used information obtained from the Center on research done in the area

to identify possible solutions and plan a program that was approved by the Board. 2) Classroom teachers in this district have used the Center for background in subject matter and for information on teaching methods.

One educator felt that the main impact of the Center was in the attitude of users. He felt they were more favorably inclined toward educational change now that they had a source of information on educational research to aid them in planning new programs.

How Potential Users are Informed of the Availability of the Center

In all districts, dissemination of information about use of the Center is accomplished in two ways: personal presentations by Retrieval Center or district personnel at staff meetings and training sessions, and distribution of written newsletters and announcements. In most districts, administrators, principals, consultants and media personnel receive the personal presentation by Retrieval Center staff; teachers have received written materials and/or presentations by district personnel. All of the administrators interviewed agreed that educators are being continually bombarded with written materials so that they rarely read carefully anything that is not related to their specific needs. It was stressed that dissemination of information about the Center should be related to needs of the users, i.e. "How can the Retrieval Center help solve my problems," and should be accomplished through personal contact. Three educators indicated that dissemination should be a continuing process.

Specific suggestions offered by the educators when asked for the ideal method of dissemination are listed below:

1) Training presentations to users should include description of what is contained in the data base, frank admission of its limitations, suggestions for possible uses of the Center, description of what constitutes an appropriate request and how to place requests, and also a description of what is obtained in a profile -- abstracts, print-out, manual search, etc. Emphasis should be placed on the follow-up process as the actual source of information.

2) If television is used for in-service training, this would be an ideal way to provide continuous up-dating of information about the service. If TV is not used and enough staff were available, a presentation by Retrieval Center staff to each school at a staff meeting in the Fall would be valuable, followed by a brief up-date visit in January. Most administrators felt that Retrieval Center staff make the most effective presentations to users since they are intimately familiar with the service.

3) It is best if potential users can see an actual print-out from the Center in order to visualize how they can best use the service themselves.

4) If BOCES could prepare a film strip or movie explaining their services and showing their Center, this could be distributed among individual schools for use at in-service training sessions.

5) Principals and/or librarians in each school should be given primary responsibility for providing continuous information about the Retrieval Center service. They should be given some training in how to take requests.

Development of a Model for District Organization of the User System

In addition to the suggestions for an ideal method of informing users about the availability of the Center, the administrators were

asked about suggestions for developing a model for organization of the user system at the district level. Three of the administrators felt that such a model was not appropriate as each district needs to establish a system based on their size and organization. Two did feel that guidelines were appropriate.

Four of the educators indicated that the idea of a model for organization of the user system was valid. Three of these suggested the system they had in their own districts in operation at that time or with planned modifications. One educator felt the ideal system could not be used in his district because of lack of sufficient staff to administer the system. Suggestions and observations of the educators concerning the model are presented in the following discussion.

Routing of Requests: Five of the six administrators who made suggestions for the model indicated that there should be a central office in the district through which requests are routed. What office this would be depends upon the organization of each individual district. It could be the assistant superintendent, the elementary and secondary directors' offices, or the media center. The reason for routing requests through a central office, according to the educators interviewed, was to enable the district to collect data concerning use of the Center. Such data might include number, subject, and date of requests, and occupation of user. If returning profiles are also routed through the central office, data concerning turn-around time and quality of profile could also be collected. However, some administrators felt that returning profiles should go directly to the user to avoid any further delays.

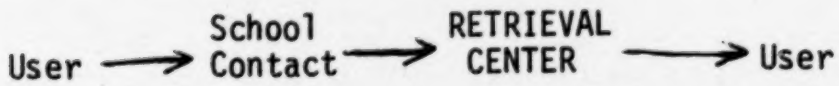
A second reason indicated for routing requests through the central office was to avoid duplicate requests to the Retrieval Center. However, educators felt that a balance should be established between preventing duplicate requests and insuring that materials are available to educators

when needed. It was suggested that this balance could best be established by sharing requests within a school building, but allowing duplicate requests to the Center from different schools.

Despite the need for centralization, the educators expressed concern for keeping the system close to the users to facilitate taking of requests, keeping users informed about the service, and decreasing delays. For this reason, several educators suggested the districts establish a network of contact persons in each school who could take requests and provide information about the Center. Most felt the school librarians would be the best user contacts.

One administrator recommended that requests be routed from the school contact (librarian or principal) directly to the Retrieval Center. He felt that the advantages of evaluation gained by routing the requests through a central office were offset by the delay and possible loss of meaning suffered.

From suggestions made by the administrators interviewed, two basic models for routing of requests within a district can be charted:



Priorities: When asked if there was a point at which priorities for use of the service should be established, the educators replied in terms of one of two categories. Three educators based priorities on the type of user, indicating that the school districts of the NCBOCES should continue to receive priority over other school districts, other states, and university,

state department of education or congressional personnel. Four educators indicated that priorities should be established according to the type of request; requests related to specific problems should receive priority over requests related to desire for general information.

Unmet Needs: Educators were asked if there were any unmet needs which could be explored through the Center. Their suggestions were as follows:

1) The media exchange already being planned by the BOCES was mentioned by several educators. One felt that this could be a part of an even broader information network among the seven districts that would include public, government, and industrial information sources and other local resources.

2) Information about innovative programs being implemented in schools in Colorado would be a valuable aid for other districts in planning and selling new programs to the public. Perhaps a questionnaire could be developed to send to school districts asking them to describe innovative programs in their districts. This could be abstracted and added to the data base.

3) A 1-page flyer listing pertinent issues on which information is available could be prepared for the districts to hand out to teachers to stimulate requests.

4) The Current Index of Journals in Education would be a significant addition to the data base.

5) The Center could provide information on what instructional materials for the children are available for a specific need, for instance information on what materials are available for elementary school children on drugs and their use.

Summary

Considerable variation among the districts with respect to organization for use of the Center was noted. The patterns of organization can be classified into three categories, however. Exchange of information about the effectiveness of various organizational patterns appears appropriate.

Since intense utilization of the Center by personnel in the districts is a major objective of the NCBOCES, emphasis on dissemination of the Center's activities to all personnel throughout the districts is appropriate.

Overall, administrators in the districts were pleased with the services provided by the Center and enthusiastic about its potential for promoting educational change. Evidence of increased familiarity with services of the Center was found between the Fall and Spring interviews. Communication about the Center among personnel in the districts showed improvement throughout the year. Continuation of the relationship between the Center and the NCBOCES districts should yield significant impact on education practice.

V. Interviews with State Coordinators

To assess the functioning of the Retrieval Center system throughout the participating states, personal interviews were conducted with coordinating personnel in Washington, Oregon, Utah, Nevada, South Dakota, Wyoming, and Colorado. In some instances only one or two individuals were interviewed, but in other instances as many as nine persons were interviewed. Although the interviews were planned to cover specific areas, an effort was made to keep them relatively unstructured and to encourage as much suggestion as possible. Content areas of the interviews included organization of the user system in the state, reaction of users to the Retrieval Center, problems encountered with the system, overall impact of the Center on educational practices in the state, procedures for informing potential users of the availability of the service, and suggestions for developing a model for state organization of the user system. Interviews were conducted during March, April and May, 1971.

Because of the great variation among the states with respect to the frequency of use, structure of the system within the state, and length of time the state has participated, separate reports were made for each state. Oral reports were given to Center personnel following the interviews and the interviews have been prepared in narrative style for the present report. The interview interpretations constitute the remaining sections of this chapter.

Evaluation of the Information Retrieval Center, Boulder, Colorado
Washington State Interviews

Interviewees: Nancy Motomatsu and Assistant
Title: Associate Supervisor of Learning
Date: March 2, 1971

Organization of the User System in the State

Information Retrieval Center activities in the State of Washington are coordinated by Mrs. Nancy Motomatsu, the Associate Supervisor of Learning. The Supervisor of Learning's office, organized under the Office of Curriculum and Instruction, is responsible for public school libraries, audio visual services, and related programs. They operate the state's main curriculum library which is an arm of the state library system. The two, however, are budgeted and administrated separately. Housed within the curriculum library is one of the state's five ERIC microfiche collections.

At the outset of Washington's involvement with the Information Retrieval Center, an advisory committee was established to contribute expertise to the office responsible for ERIC. This board was comprised of a representative from the Office of Superintendent of Public Instruction, a representative from the Washington State Library, and representatives from each of the four institutions of higher education which house ERIC collections.

As presently structured, all user requests are processed through the office of the Associate Supervisor of Learning. In most cases these requests are made directly; however, in some instances an intermediary is involved, e.g., a school district staff member. If the coordinating staff has any question regarding the request, the user is contacted directly for clarification. Processed requests are returned by the Resource Center to the Associate Supervisor's office where they are checked and repackaged to

send to the user. The purpose of the repackaging is to allow the coordinating staff to collect evaluative information such as number of profiles returned, turn-around time, and number of manual searches received. These data along with the number and kind of requests received are systematically recorded. Repackaging and checking takes from less than one day to three days.

The administrative and processing costs associated with the project incurred by the State have been absorbed by the Office of the Supervisor of Learning under their existing budget. It was pointed out by those interviewed that, if Washington is to continue to use Information Retrieval Center services, funds above and beyong the $9,000 contractual arrangement with the Resource Center will have to be appropriated to meet administrative and processing costs. Currently an estimate of these additional costs is being prepared.

Priorities for usage of the Resource Center services have been established. These are in order:

1. Office of Superintendent of Public Instruction staff
2. Intermediate district staff
3. Local educational agencies staff--administrators, teachers, and supportive staff
4. School Board members
5. Other

Reaction of Users to the Resource Center

To monitor user reaction to the Resource Center service, copies of the completed evaluation questionnaire being returned by users to Boulder were made and checked. While citing both positive and negative comments made by users, those interviewed felt that the overall reaction was positive. Some of the complaints that were received could have been avoided if users had a clearer understanding of the limitation of the ERIC system, it was reported. No urban-rural differences in satisfaction were noted; however, it was pointed out that the kinds of requests emanating from the two areas differ. Requests from the latter have been much more specific, e.g., how to set up a mobile film laboratory. On the other hand, an example of a rural request might be "I would like to find out what is going on in the area of team teaching."

Because the three new products, PET, CAT and CAP had not been used in Washington, there was limited basis for evaluation. The Associate Supervisor's own reaction was quite favorable, however, primarily because of the potential of the new products to reduce turn-around time.

Problems Encountered with the System

The major problem cited by those interviewed was turn-around time, which in Washington usually runs about 3-4 weeks.

A second problem area involved coordination of request form and profile numbers. It was reported that to facilitate processing and checking of requests and returned profiles, a common code number should be assigned to all materials regarding a specific order. It was suggested that if the original question along with its ERIC translation were

returned with the profile, it would be helpful.

More training is needed in taking requests, it was reported. The Washington staff did not feel the summer training program in which they participated was satisfactory in this area. Furthermore, it was suggested that out-of-state staff be separated for training from BOCES staff because of the irrelevance of much of the BOCES material.

Some complaints had been received that microfiche copies were not clear and there was a shortage of readers in outlying districts. Steps were being taken to correct this latter difficulty.

No major problems were cited regarding the quality or quantity of information received.

Finally, the staff in Washington reported they were still waiting for the Current Index of Journals in Education to be put on the computer.

Overall Impact of the Center on Educational Practices in the State

The program coordinator indicated that it was too early to assess the impact of the Information Retrieval Center service on educational practices within the state. However, people involved in changes in curriculum, trimester experiments, school year extension studies, among others, have used the system and likely have benefited from it, according to Mrs. Motomatsu. It was suggested that a systematic evaluation of the impact be undertaken during the next year. This evaluation should include contacting specific schools or school districts who have extensively used the service to determine what changes, if any, have been made as a result of the information received.

Procedures for Informing Potential Users of the Availability of the Service

Information regarding the availability of the Resource Center service in Washington was disseminated to potential users through various channels. Articles were published in "Your Public Schools," a monthly newspaper in the state, and announcements were made in workshops and at professional meetings. Furthermore, microfiche equipment salesmen were informed of the service so that when making calls on potential customers, the program could be described. In Washington, a concentrated program to publicize the availability of the Resource Center was not made because the coordinating staff felt that they could not handle the large number of requests which might result. They pointed out, however, that a systematic dissemination plan should be coordinated through the state's 14 intermediate districts, as well as through all first class districts, a designation made primarily on the basis of size. Talks, film strips, sample packets for district workshops, and personal contact were all listed as possible dissemination vehicles.

Suggestions for Developing a Model for State Organization of the User System

Two possible state organizations were suggested. The first involved coordinating the program through the state library system. Libraries in Washington are organized into networks made up of 4 or 5 districts so that costs of expensive resource materials can be shared by adjacent districts. It was suggested that the Resource Center service be set up as an adjunct to these networks with a contact point within each network. The contact librarians would take requests and forward the request to Boulder where they would be processed and returned directly to the user. It may, however, be necessary to channel the profile back through the librarian so that evaluative

records could be maintained. The coordinating staff was of the opinion that it was critical to minimize the number of intermediaries involved in the system.

A second possibility would be to establish user contact points in each of the 14 intermediate school districts in the state. Washington has consolidated all of its school districts into 14 intermediate districts. This system would be set up so that the user phones his or her request to the intermediate district office. They in turn relay all requests received to Boulder once each week. The Resource Center would process each request and return the profiles to the district who would in turn send them to users.

Interviewee: Dr. Fran Flerchinger
Title: Manager of Computer Applications
Date: March 2, 1971

In addition to meeting with the Associate Supervisor of Learning and her assistant, Dr. Fran Flerchinger, Manager of Computer Applications, was interviewed. It was Dr. Flerchinger's feeling that the money necessary to continue use of the Boulder Resource Center service could be better spent developing their own competencies in this area. He cited two primary problems with the system as presently structured:

1. The process of screening documents often contributes to the dissemination of irrelevant or incomplete information.
2. The long distance between Boulder and Washington state results in too long of a turn-around time.

He would prefer to receive a list of titles not sorted by a librarian. The present system is too dependent upon "buzz" word terminology which becomes too easily outdated, he reported. He instead proposed a system utilizing automatic indexing, where the machine analyzes articles using the author's terminology.

Evaluation of the Information Retrieval Center, Boulder, Colorado
Oregon State Interviews

Interviewee: George Katagiri, Director of Instructional Technology
Jack Bech, Retrieval Coordinator
Date: March 4, 1971

Organization of the User System in the State

The Boulder Information Retrieval service is offered to educators and administrators in Oregon through the Oregon Board of Education's Retrieval-Dissemination Center in Salem. The Salem Center is headed by George Katagiri, Director of Instructional Technology. Jack Bech is the Center's Retrieval Coordinator.

The Center was established on a pilot basis as part of a federally funded effort to "close the communication gap" between educational research and practice. More specifically, the project was designed to test the effectiveness of a dissemination system based upon computerized storage and retrieval of information, where personalization of the communication process is stressed.

The program has been primarily oriented toward two intermediate school districts in the state, located in Lane and Umatilla counties. Each county or intermediate district has a field agent assigned to it whose role is to assist in identifying problems, obtaining proper solutions and in setting up innovative programs.

Upon receiving a request for information, the field agent forwards the problem to the Salem Center where a decision is made regarding which information source or sources will be used. The Boulder system is only one possibility. Others include the Oregon Total Information Service (OTIS)

the cities. The Retrieval Coordinator felt the new products would prove particularly valuable in meeting the needs of these rural users. Little other evaluative information was available concerning the new products as they had just become available at the time of the interview.

Problems Encountered with the System

Turn-around time was cited as the major problem encountered with the Resource Center Service. In Oregon, requests have been taking from three to four weeks to process. Interestingly, turn-around time for the three or four PET packages ordered was about the same.

The Retrieval Coordinator indicated that slightly less than 10% of all profiles had been "off base" with respect to the relevance of the information supplies. Lack of microfiche equipment was also listed as a problem; one which the state has begun to take steps to resolve.

Overall Impact of the Resource Center on Educational Practices in the State

Oregon is essentially just getting underway with their dissemination program; and therefore, it is too early to assess the impact of the Resource Center on educational practices in the state. Essentially, an evaluation of the impact would involve an assessment of how well the field agents have performed their jobs of facilitating change based on the information supplied by Boulder and others.

(who have the complete ERIC system on computer), various specialists at the Oregon Board of Education and other consulting agencies and individuals throughout the state, the Oregon State Library, as well as special materials housed within the Salem Center.

If a decision is made by the information specialist to use the Resource Center in Boulder, the problem is immediately forwarded there. Currently, about 60% to 75% of all ERIC needs are sent to the Resource Center. Boulder returns the profile to Salem where it is inspected and sent to the agent who in turn takes it to the user.

Requests for information are also accepted from the rest of the state. These come directly to Salem, by-passing the intermediate field agent. Systematic records of all transactions with Boulder have been maintained and include the request number, origin of request, date received, brief statement of problem, agency or person where the problem was directed, kind of information furnished, the clients name, and the date the transaction was completed.

Overall Reaction of Users to the Resource Center

The overall reaction of users to the Boulder service has been good according to those interviewed, particularly with respect to the manual searches received. One factor cited as contributing to the acceptance of the service was the personalized format of the returned profiles. No urban-rural differences in satisfaction were reported. However, as in Washington state, the kinds of requests made by rural teachers and administrators were more general in nature than request emanating from

Procedures for Informing Potential Users of the Availability of the Service

Availability of the Boulder Resource Center service has been publicized through various channels as part of the service offered by the Oregon Board of Education Retrieval Dissemination Center. In addition to announcements made in various education publications, a brochure describing the Center was prepared and disseminated. However, major responsibility for publicity and user education has rested with the two field agents who inform educators and administrators of the service on their visits to schools in their district. During the pilot stage of the project, which will end December 31, 1971, efforts to publicize the program have been and will continued to be directed to Lane and Umatilla counties, it was reported.

Suggestions for Developing a Model for State Organization of the User System

In designing an ideal dissemination system, those interviewed stated they felt that a trained cadre of field agents would be an essential component. Intermediate district staff, they suggested, are already "spread too thin" in Oregon, as well as in many other states, to assume the additional task of coordinating such a program. The key to the success of a retrieval dissemination service is personalization of the total communication process, they reported. Moreover, it is essential to approach information dissemination from the point of view of the user and his needs. This, they indicated, could most easily be done by a person working directly with the user, helping his identify his problems, obtain information on which to base a solution, and help him implement a program to

solve the problem. The field agent has the additional advantage of being in a position to identify common problems within his district so that resources can be pooled to solve these mutual problems.

Ideally, it would be desirable to locate a field agent in each county in the state. In more populated counties like Multnomah, two or more agents might be required. This would necessitate hiring and training about 50 field agents in a state the size of Oregon.

The actual system of requesting and receiving information would remain unchanged from that which is currently used, i.e., user ⟶ agent ⟶ Salem Center ⟶ Boulder ⟶ Salem Center ⟶ Agent ⟶ user.

Interviewee: Dorothy Alexander, Librarian
Northwest Regional Education Laboratory
Date: March 3, 1971

Information Retrieval Center activities in the State of Oregon were originally coordinated by Mrs. Dorothy Alexander, librarian for the Northwest Regional Education Laboratory in Portland. The program was then shifted to the State Library and from there to its present location at the Oregon Board of Education Retrieval-Dissemination Center in Salem.

As a result of Mrs. Alexander's early involvement in the project and her extensive use of the system, she was asked to give her impressions of the Resource Center service.

Originally, Mrs. Alexander had proposed that a cooperative dissemination service be organized in Oregon involving the state librarian and other state agencies concerned with research and dissemination. Most recently she suggested that the system should be coordinated by the State Board of Education Library which is separate from the state library. The advantage of locating the service within the school libraries is that the user contact person would be a librarian trained in information retrieval techniques.

As a frequent user of the service, Mrs. Alexander cited two major problems with the Resource Center. First, turn-around time has been too long; and second, some of the information screening done by the Center has resulted in the return of inaccurate or irrelevant information. To alleviate this latter difficulty, it was suggested that the contact librarians be trained in descriptor term usage as well as in techniques to help users clearly specify their problem. This approach would necessitate direct contact with the user, something Mrs. Alexander felt is essential.

Education of potential users should take place through 1) state educational programs, 2) inservice educational programs, 3) local and regional educational meetings, it was suggested.

According to Mrs. Alexander, educators in the state of Oregon definitely need a system like that provided by Boulder, but indicated that its continuation would be only a small step toward closing the gap between research and practices in education.

Evaluation of the Information Retrieval Center, Boulder, Colorado
Utah State Interviews

Interviewee: Kathy Wallentine
Title: Media Specialist/Reference Center Manager

Organization of the User System in the State

Kathy Wallentine, Media Specialist for the State Department of Education, coordinates Information Retrieval Center activities in the state of Utah as part of a broader Federally funded Technical Assistance program.

Essentially, this Technical Assistance Program was designed to provide rural Utah educators with direct and personalized access to the results of current educational research. At the time of the interview, 25 rural school districts were participating. There are 40 districts in the state. Participating districts were organized under four regional centers located in Price, Cedar City, Heber City, and Richfield, Utah. A resource agent was attached to each center, whose job it was to collect and clarify requests for information on any school issue. These requests were then forwarded to the Reference Center Manager in Salt Lake City who in turn would relay the requests to Boulder or other appropriate sources. These other sources included various research and development centers, State Department personnel, university advisors, Bureau of Educational Research, Exemplary Reading Center, Utah Title III project, as well as college, state and State Department of Education libraries.

The return channel for profiles was the same. Evaluative records of all transactions were maintained by the Salt Lake City staff. In addition to providing rural educators with resource agents, teams of State Department personnel were available to assist in program implementation. Administrative and processing costs of using the Information Retrieval Center service have

been absorbed by the Technical Assistance Program.

To date, the program has been directed toward educators and administrators in 25 rural school districts. Others eligible to use the Boulder service include State Department of Education personnel and participants in a curriculum writing project in the state.

Overall Reaction of Users to the Resource Center

Reactions of users to the Resource Center service to date have been generally satisfactory according to the Reference Center Manager, who has monitored evaluation questionnaires being returned to Boulder. She also indicated that manual searches have been received better than computer supplied information. The Technical Assistance (T.A.) Coordinator, Dr. Kenneth Lindsay, was quoted as saying that the Boulder service to date had not been a valuable adjunct to the T.A. program because of the long turn-around time involved in requesting information from the Resource Center. He was enthusiastic, however, about the potential for the new products PET, CAT, and CAP to reduce processing time. Only a few new products had been ordered, so evaluative information from users was limited. It was pointed out that the first few ordered were taking considerably longer to receive than had been anticipated.

Problems Encountered with the System

The major problem reported was turn-around time. In Utah it has been taking about three weeks to process a request. Furthermore, no significant time reduction occurred with the introduction of new products.

A second problem involved the inaccurate, irrelevant, or incomplete information that has been sometimes supplied by Boulder. This has been particularly the case when requests for individual searches have been made and new product packets were returned instead.

Another difficulty involved in this shift was that the identification number assigned to the request was not transferred to the returned packet. This failure to maintain a consistent identification system was also the case for some individualized searches. The problem that results from this practice is that the Reference Center Manager has difficulty in matching requests with returned profiles.

Complaints were also received regarding the unavailability of resource materials from Boulder, for example, a description of instructional materials that might accompany a given reading program. The Utah coordinating staff would also like to see the Current Index of Journals in Education put on the computer.

An additional problem resulted from the rural orientation of the Utah program. Most users do not have easy access to microfiche readers. Each agent has only one.

Finally, it was pointed out that some of the complaints lodged against the Boulder Retrieval Center could be avoided by a better user understanding of what ERIC is and its limitations.

Overall Impact of the Resource Center on Educational Practices in the State

In general, it was too early to assess the impact of the Boulder service on educational practices in Utah. However, at the date of the interview,

four or five State Department specialist teams had been sent out to assist rural educators. In none of these cases were the programs implemented related to information received from Boulder.

Procedures for Informing Potential Users of the Availability of the Service

Primarily potential users in Utah were informed of the availability of the Boulder service through the four regional agents. Personal contact has been stressed on visits to schools. The Reference Center staff in Salt Lake City prepared and disseminated a brochure describing the program and announcements were made in various State Department staff meetings.

Suggestions for Developing a Model for State Organization of the User System

Reference Center Manager supported the basic concepts of Havlock's model of information dissemination. Personalization of the process, she felt, was important. Ideally, each region within Utah would have an agent assigned to it who would coordinate retrieval dissemination activities. His primary job would be to gather information from schools regarding their needs. He would then translate these needs and supply information relevant to the translated problem. The critical aspect of this system would be starting with the needs of educators and administrators. The actual channels of information processing would remain unchanged from the system currently being used in Utah .

Evaluation of the Information Retrieval Center, Boulder Colorado.
Nevada Interviews

Interviewee: Victor Hyden, Jr.
Title: Director, Nevada Regional Educational Center, Lovelock, Nevada

Organization of the User System

Whereas the state of Nevada did not officially subscribe to the information retrieval service provided by the Resource Center in Boulder, the service was extensively used by teachers and administrators within the 17 county jurisdiction of the Nevada Regional Educational Center located in Lovelock. Victor Hyden, director of the Lovelock Center, coordinated Retrieval Center activities within this region.

All user requests were sent or telephoned directly to Mr. Hyden's office who in turn would relay them to Boulder. The return channel was the same. As of the date of this interview approximately requests had been processed by his office. Unique to Nevada was the procedure of having users, when finished with the information provided by Boulder, return it to the Regional Educational Center. The purpose was to make these documents available to a larger number of teachers and administrators by maintaining them in the Regional Library.

Users were not charged for the service. However, the Lovelock center was charged by Boulder on a per-profile returned basis. These costs were absorbed within the Lovelock Center's Title III budget.

In addition to the Information Retrieval Center, the Regional Educational Center had access to the Lockheed Information Retrieval Service located in San Francisco. An informal comparison of the Boulder service with Lockheed was made by sending each organization identical requests and then comparing the accuracy of returned profiles and the processing time to receive the

requested information. However, because of the small number of requests sent using this procedure, conclusions regarding the superiority of one system over the other were not warranted. In one out of the three tests made the information supplied by Lockheed was more accurate in the judgement of the user. In the other instances no difference was noted. No advantage to either organization was found in the area of turnaround time.

The Nevada Regional Educational Center in Lovelock, a Title III project, will end this year and according to it's director it is unlikely that the state of Nevada will enter into an agreement with the Boulder Resource Center for continued use of its service.

Reactions of Users to the System

In general, the reactions of users were favorable. Opinions of users regarding the service were obtained through personal contact and monitoring of the evaluation questionnaires used by Boulder.

No information was available regarding responses to the new products offered by the Resource Center; PET, CAT, and CAP. Mr. Hyden did state, however, that he felt the new products would be very useful in the rural areas served by his Center.

It was reported that the evaluation questionnaire used by the Retrieval Center to assess user satisfaction needed improvement, particularly as it related to the state of Nevada. Question number two regarding manual searches was irrelevant because vertually no manual searches were provided Nevada users. Question number three regarding willingness to pay for the retrieval service on a cost-per-profile basis should have been more specific, it was reported. It was suggested that a

listing of possible costs be included. Furthermore, it was felt that there should have been a question dealing with turnaround time and one designed to identify from whom the user had heard about the service.

Problems Encountered with the System

The major problem with the Retrieval Center service, as reported by Mr. Hyden, was turnaround time. It was felt that the slowness of the service resulted in a drop in the number of requests made from within Nevada. One request was sent by Mr. Hyden's office two and one-half months ago and the profile had not been returned at the time of the interview.

Another major problem was the unavailability of microfiche readers. There were virtually no readers available outside of Lovelock in the 17 county area served by the Regional Educational Center.

There was evidence as reported by Mr. Hyden that in some instances the information returned by Boulder was not directly related to the original request. Part of the problem, it was felt, resulted from weaknesses in the design of the user request form. The form currently used does not lead to a point of fine definition it was reported. Finally, it was pointed out that for a service of this kind to become effective in a rural area will take considerably more time than would be the case in urban districts.

Overall Impact of the Center or Educational Practices in the State.

In general, it was reported that Nevada had not subscribed to the Boulder Retrieval Center service long enough to assess its impact on educational practices within the state.

How are Potential Users Informed of the Availability of the Center.

In Nevada potential users were informed of the availability of the service primarily through personal contacts with Mr. Hyden. In addition, bulletin board announcements regarding the service were prepared and disseminated to participating school districts.

Suggestions for Developing a Model for State Organizations of the User System.

It was suggested that ideally the user system should be organized through the State Department of Education and definitely not through a college or university. It was felt that a university designed and operated system would be non-user oriented. Furthermore, it was stated the system should not be coordinated through a library. Unlike the situation in urban areas, it was estimated that to establish an efficient and effective information retrieval service in rural school districts would take from three to five years.

A critical component in developing such a system would be to orient it to the needs of the user. To accomplish the use of field agents was suggested. Moreover, it is critical to minimize the number of intermediaries involved in processing requests.

In Nevada political control rests in Las Vegas. This is also where the states larger school systems are located and, as a result, it was suggested that innovative educational programs could most easily be established and conducted there and not in the rural areas of the state.

Evaluation of the Information Retrieval Center, Boulder, Colorado

South Dakota Interviews

Interviewees: Mr. Art Shaver, Coordinator of Federal Programs, Sioux Falls Independent School District #1.
Mr. Lloyd Duenwald, Director, Title III Project, former Director of Educational Service Center
Mr. Jim Simpson, Coordinator of Retrieval Center Activities
Dr. William Quincey, Director of Planning and Evaluation, State Department of Public Instruction
Dr. Barnhart, State Superintendent of Public Instruction

Organization of the User System

Requests for information are sent to Mr. Jim Simpson, either by phone or letter. He transcribes the requests onto the request forms, using the handbook of ERIC descriptors to narrow them down and sends them out. If the request is urgent, this is done by telephone; otherwise by mail. The request profiles are sent to him via the computer, generally at night. Since the telephone rates are less expensive at night, he leaves the computer on "unattended mode" to receive output from Boulder. Upon receipt, he edits, packages and sends the information to the requestors. When the computer is working properly (which has been less than one month since its installation) turn-around time is approximately one week. Although the manual search has been discontinued by the Retrieval Center, Mr. Simpson has enlisted the aid of the state library at Pierre in doing them himself. In addition, he consults the Bureau of Labor Statistics, Science and Technology Referral Center, and the National Labor Relations Board, among others, depending upon the subject of the search.

Most requests for follow-up on complete documents are also funneled through Mr. Simpson. He gets in touch with the state library, once again, and gives them the reference numbers of the articles to be copied. All information, whether it be in microfiche or book form, is sent out as hardcopy. Consequently, turn-around time on manual searches and requested complete documents has been substantially reduced. In addition, few problems seen to have developed with the microfichesystem since little, if any, actual microfiche is sent out to the users. Another interesting point is that these services provided by the library are completely free, including paper. When sending out the initial profiles, he includes a cover page stating that full documents can be obtained free of charge compliments of the state library. With the advent of the new pre-processed packets, Mr. Simpson feels the demand for reproduced materials will decline.

The retrieval system is actually administered through the library system and State Department of Public Instruction. The State Department pays the cost for administering the system and the library provides office quarters, hard copy reproduction and manual search services. The state does not pay for the services, only the administration of the system. The State Department of Public Instruction has allocated money from Title IV, Section 402, Resources and Planning, for this purpose. The costs include Mr. Simpson's half-time salary and leasing of the computer terminal.

The service may be used by anyone, but is free only to personnel in elementary or secondary education or connected with the State Department of Education. Graduate students are required to pay.

Reactions of Users to the System

Not many evaluation forms have been returned to Mr. Simpson since some are also sent to Boulder. Of the ones he has received, he stated that 95%

answered "yes" in response to the question about paying for the service on a cost-per-profile basis.

Problems Encountered with the System

With regard to problems associated with the service, Mr. Simpson suggested that dissemination of information about the services provided by Boulder was a major problem. Very few teachers have been made aware of the Retrieval System. This is evidenced in the vast majority of requests on educational administration. When the terminal was initially established, a State Department Bulletin was circulated. It generally got only as far as the principals, however. Subsequent newspaper articles have made mention of the service. Until recently, virtually no formal effort was made to inform teachers. Lately, Mr. Simpson has been sending out request forms with a letter informing potential users of the Service. The response, he feels, has been much better than when information was sent without request forms. The main problem in his opinion is that people don't understand the written word, and personal presentations should be made. He suggested two ways in which dissemination can be improved:

1) When regional and local Education Association meetings are scheduled, plan to make a presentation as an adjunct to the discussion topics. His point here is that perople would be more motivated to attend this type of meeting than if the sole purpose was to disseminate information about information retrieval. This way the people are already assembled.

2) Use State Department personnel to serve a sub-stations throughout the state. They could disseminate information and gather requests at the same time.

With regard to microfiche problems, as was mentioned earlier, no problems have yet developed since all documents are reproduced in hard copy form. Mr. Simpson mentioned that the Information Retrieval system simply could not operate in South Dakota without the aid of the library in providing documents.

Quality and pertinence of information is dealt with at the request stage. Since he knows the people fairly well, Mr. Simpson has developed an intuitive sense of what they want. In preparing requests, he occasionally interprets their requests when they are either unclear or subject to misinterpretation. For example, he mentioned a request on "indian" culture. He knew they meant "American Indian" as opposed to "India" so he processed the request accordingly. In the same manner, he often edits the information sent back. As a result, requestors receive pertinent information without having to wade through mounds of material. Of course, he runs the risk of over-editing. When a search comes up empty or with irrelevant information, he questions the user in order to assign more pertinent descriptor terms for a second search.

Turn-around time has been slow compared with what the requestors had been used to. Whereas they were accustomed to waiting about one week, they now must wait an average of three to four weeks for their requested information. Our cross-classification shows 19.3 and 25.8 for computer and manual processing time, respectively. Jim mentioned, however, that the users don't seem to complain too much.

Overall impact of the Resource Center on Educational Practices in the State

In citing programs which have been modified, begun or influenced as a result of using the Retrieval Center, Mr. Simpson mentioned the following:

1) Watertown used information in developing a continuous educational program from grades 1 through 12. He says they were lost until they received the information.

2) In Western South Dakota information was requested on evaluating a Title III Drug Abuse program. They supposedly incorporated this information into their evaluation plans.

3) Information about evaluation instruments and techniques in outdoor education was used in one of the projects.

4) At the Douglass school information was used to develop a summer in-service training program for kindergarten teachers.

5) Environmental and outdoor education information was used in a summer teach-in.

6) Attitudes of school planners and builders have changed with the receipt of information about new designs in use elsewhere.

Summary

Overall, the system seems to be running fairly smoothly in South Dakota. Jim Simpson seems to have been doing a competent job in handling requests. Although dissemination has been fairly poor, he expects his current campaign will boost the number of requests. Should that eventuality occur, the operation would most certainly have to expand. Given his present half-time position, he could not handle the flood of requests himself. He has applied for a secretary to help him in processing the increasing load of requests. At the present time, there are no back-up plans should the library's services suddenly become unavailable. It is expected, though, that the new products will lessen the severity of this

potential happening in that a substantial decrease in the demand for manual searches and follow-up of complete documents can be anticipated. One alternative would be to move the terminal to Vermillion where all the resources are housed. The main disadvantage, though, would be the loss of Jim Simpson. He has been the mainstay in South Dakota and is a valuable asset to their Retrieval System. However, South Dakota State University seems to have greater possibilities for expansion. One other disadvantage, although a temporary one, would be a transitory loss of some requestors.

In summing up, the system as presently run seems to be operating efficiently. However, if the future is to be considered, serious thought ought to be given to expansion and the feasibility of its being accomplished at Madison.

Evaluation of the Information Retrieval Center, Boulder, Colorado
Wyoming State Interviews

Interviewees: Mr. Jim Sheehan, Director of Information Management Services, Wyoming Department of Education
Mr. Mel Gillespie, Federal Projects Coordinator
Mrs. Carol Stearns, processor of all information requests
Mr. Paul Sanifer, Assistant Superintendent for Planning and Development

Requests for information in Wyoming are sent to Carol Steans in the Information Management unit. She in turn forwards the request to Boulder either by mail or through Boulder's weekly telephone call. Processed information is returned through the same channels. Completed evaluation forms are sent to Cheyenne.

The Retrieval Service is available to all elementary and secondary education people as well as State Department of Education personnel on a cost-free basis. It is often used by state legislators, board members, administrators and, to a lesser extent, teachers, in pursuing government projects. Others in the state, such as graduate students, are charged on a cost-per-profile basis. Hardcopy and microfiche may be obtained from Boulder or the State Department of Education in Cheyenne since a complete ERIC microfiche set is on file there. They do not have a microfiche duplicator, but a large reader-printer is on the premises. Numerous portable readers (approximately 200) are scattered throughout the 125 school districts in Wyoming. No limits have as yet been placed on microfiche check-out time.

Everyone at the State Department was quite pleased with the Retrieval System and its operation. Users have primarily been administrative types and they appear to have been well satisfied. Although no specific instances or examples could be given with regard to changes in attitude, morale, practices, etc., on the part of the users, it was generally agreed that the effect of the requested information was positive.

Very few operational problems with the Retrieval Service were defined. The main problem area, according to Gillespie and Sheehan, is Boulder's desire to see Wyoming use the service more often. As of December of 1970, approximately 50 requests had been processed for Wyoming requestors (most of which were in October, November, and December). It was Sheehan's impression that the lack of follow-up requests for complete documents was partially responsible for Turner's less than enthusiastic response to Wyoming's participation. Since the State Department has the complete ERIC microfiche set, complete documents can be reproduced more quickly and at little or no cost to the user (usually free unless an inordinate amount of paper is required).

Turn-around time has engendered both satisfaction and dissatisfaction, depending upon user expectations. Little more can be said about that. Generally speaking, descriptors are set outside the limits of the request, resulting in more information than necessary. This, however, has not incited criticism, as most of the information has been quite pertinent. According to them, manual searches are still being conducted for them by Boulder, unlike the South Dakota situation.

No money has been specifically allocated for administering the system in Wyoming. Administrative costs are absorbed through the delegation of additional responsibilities to State Department personnel. It is this

area in which Mr. Gillespie feels changes should be made. He suggested the assignment of clerical staff with direct responsibility for handling requests. It was the evaluator's impression that the current request load did not warrant such a change. However, innovation of this kind could be meaningful when expansion becomes necessary.

With regard to dissemination, little information about the Center's services has been circulated. One article appeared in The Educator, a State Department of Education publication, occasional articles have appeared in newspapers, and frequent users sometimes spread the word. A campaign is presently being conducted in which 5,100 Wyoming educator's are being informed of the Retrieval Service in a circular whose heading states, "ERIC offers free research for Wyoming educators." In this publication, the July 1 deadline for free searches is mentioned and some sense of urgency is conveyed. The purpose is to rapidly boost the number of requests from Wyoming, thereby increasing their credibility as a future client. It is anticipated that the request load will rise substantially during this six month period.

Both Gillespie and Sheehan suggested the use of workshops and highly localized presentations at district meetings for dissemination. Sheehan felt there was too little time to accomplish this before July 1. The suggestion was made to have an education consultant in the field, one of whose functions would be to hold these workshops. Gillespie called for the continuous dissemination of data and information collected throughout the state to the education community. The purpose would be to stimulate and improve practice at the local level.

With regard to the impact of information obtained from the Boulder service, two instances were cited:

1) Information on learning handicaps and disorders resulted in having a program funded for the Cheyenne local school district.

2) The University of Wyoming College of Education has requested and incorporated to a certain extent information on teaching evaluation methods in other states.

In summing up, they are extremely pleased with the service, feel it is well-conceived, and are pushing for greater usage in their state.

Interviews With

Colorado State Department of Education Personnel

To obtain the reactions of the State Department of Education personnel to the Resource Center, interviews were conducted with the following persons:

Dr. Roger Duncan, Supervisor
Dr. Charles Beck, Consultant
} ESEA Title III Office

Mrs. Elizabeth Gibson, Consultant, Improved Learning Unit

Mr. James Meeks, Assistant Commissioner

Mrs. Esther Snyder, Reference and Interlibrary Loan Specialist, Library Services for State Agencies

Mrs. Ruth Tromley, Consultant Field Programs and Consultant Services Unit

Mrs. Bobbye Young, Director
Miss Joan Harrigan, Asst. Director
Mr. Hoover, Consultant, Library Development and Program Coordination Unit

} Office of Library Services

Mr. Edwin Hildebrand, Director of Project SPREAD

State Department personnel have been among the most extensive users of the Information Retrieval Service in Boulder. However, a few of those interviewed had had only administrative contact with the Center.

Strengths of the Resource Center

At the outset, it is important to point out that all of those interviewed, without exception, were of the opinion that the Retrieval Center in Boulder was filling a critical education need. Furthermore, all agreed that the

Center was well organized, well managed, and staffed with competent personnel. Other strong points of the Resource Center's operation included the continual effort made to upgrade and improve the service and, at the same time, maintain "personal" contact with users. The effective blend of technology with personalization of the communication process was mentioned by many as the major strength of the program.

Specifically, with respect to the profiles prepared by the Center, general satisfaction was noted. The new products, PET, CAP, and CAT, were cited as being examples of the continued improvement of the quality of the service offered by Mr. McCleary and his staff. Other major strengths reported involved the cooperative attitude of the management and staff toward developing joint programs with other state agencies, e.g., with the Office of Library Services and Project SPREAD.

Problems Encountered with the Resource Center

The problems cited with the Center's service were minimal. A few persons in the library services area felt that turn-around time was too long. However, most stated that this was not a problem. In general, the quality of the materials provided was judged good, although a question did arise regarding differential comprehensiveness of profiles provided graduate students as compared to the State Department personnel, with graduate students receiving less comprehensive profiles. It should be noted that this question was based on a limited number of comparisons and that many factors could have accounted for these differences even when identical requests are made at different periods in time or even the same period in time.

Unmet Needs and Suggestions for Future Development of the Center

When queried about unmet needs, several suggestions were made for the future development of the Center:

It was suggested that it would be desirable to have a list of diagnostic materials on the computer classified by skill, as well as entries involving prescriptive approaches to deal with diagnosed deficiencies. This would allow a teacher not only to identify specific pupil weaknesses, but also develop a program to remedy the problem identified using the most up-to-date materials and techniques.

The addition of affective, cognitive, and psychomotor behavioral objectives to the data base was also recommended along with a description of tests available to measure these objectives. Also, it was suggested that a list of all teachers in the state by subject area (a list now maintained by the State Department) be added to the existing data base at the Resource Center. This, it was reported, would allow wider and easier access to this information for purposes of administrative planning and program development throughout the state.

It was pointed out that there is a need for clearinghouses to systematically examine contradictory entries within ERIC and discard outdated materials. In addition, it was suggested that continued development of joint programs with other offices within the state should be encouraged. More specifically, a coordinated exchange of information with Mrs. Lola Quintan of the South East Metropolitan BOCES, who provides an abstracting service in specified areas of education, should be encouraged.

Many interviewed indicated that the service should be made available to more people including not only educators in Colorado, but in all states

as well as graduate students and college and university faculties. Specific suggestions regarding expansion in Colorado involved installing terminals in each Board of Cooperative Service. To maintain the personalized nature of the retrieval and dissemination process, one person suggested placing pictures of the Resource Center staff in the BOCES terminal rooms.

To make the service available to a broader spectrum of users, more publicity for the Center is needed, it was reported. In addition, potential users should receive training in how to make a request. More specifically, they should be instructed in how to clearly delineate their problem. To accomplish this, in part, some felt that visits to the Center would be helpful. It was further pointed out that to assure the greatest possible use of the service by teachers and administrators in the state, free telephone service to the Center should be provided.

The management of the Retrieval Center has initiated plans to use their leased computer at night to print checks, grade lists, etc., to help defray computer costs, and this idea received encouragement from members of the Title III Office interviewed.

People in the various offices interviewed have been encouraging their staffs to use the Retrieval Service; however, it was suggested more effort should be directed along these lines in the future. Moreover, individuals submitting Title III proposals have been encouraged to use the service.

The suggestion was made that when it becomes economically feasible, consideration should be given to subscribing to a currier service to assure prompt delivery of materials which are often slow in reaching users when the mail is used. Considering the long range development of the Center, some suggested that the Center might be absorbed by the State Library.

However, those who advanced this suggestion were quick to point out that the staff, organization, and location of the Center would have to remain unchanged if it were to be successfully taken over by the library. Others argued that the Center would remain independent.

In addition to the general satisfaction with the specific educational need being met by the Information Retrieval Center, secondary benefits have resulted from having the Center located in Colorado. On the national scene, the Title III National Advisory Board has recognized the Center as have some members of Congress, it was reported. Furthermore, it was pointed out that politically, having the Center located in Colorado has facilitated additional funding of Project SPREAD, the headquarters of which are also in Colorado.

To summarize, all of those interviewed agreed that the Resource Center was filling an important educational need and that the Center was well organized, well managed, and was staffed with competent personnel. Few problems were noted with the service. However, many suggestions were made regarding the future development of the Center. These focused primarily on increasing the data base and expanding the service to a broader spectrum of users.

Overall, the comments of those interviewed indicated that the Information Retrieval and Dissemination Center in Boulder is an exemplary Title III project.

Summary Statement

As can be seen from the foregoing interview reports with state coordinating personnel, patterns of organization for use of the Retrieval Center are extremely varied. This variation is both a strength and an area of concern. The strength of the varied organizational patterns among states lies in the accommodation of individual differences in personnel and educational organization among the states. In other words, since each state is unique, it is appropriate that the dissemination system also be unique. However, with each state functioning autonomously in the organization of the services of the Center, each state must develop its own system. Since some errors are being and have been made, comparison of experiences among states, without regard to dictating the appropriateness of a particular pattern for any given state, should lend efficiency to the operation of the Center. Such an approach would avoid the possibility of each state making the same mistakes. It is felt that the Retrieval Center can improve the functioning of the utilization of the service by offering several alternative plans to any state and permitting the state to select the plan most appropriate for their situation. This is a plan which will become increasingly important as additional state participate in the Retrieval Center concept.

Retrieval Center Staff Interviews

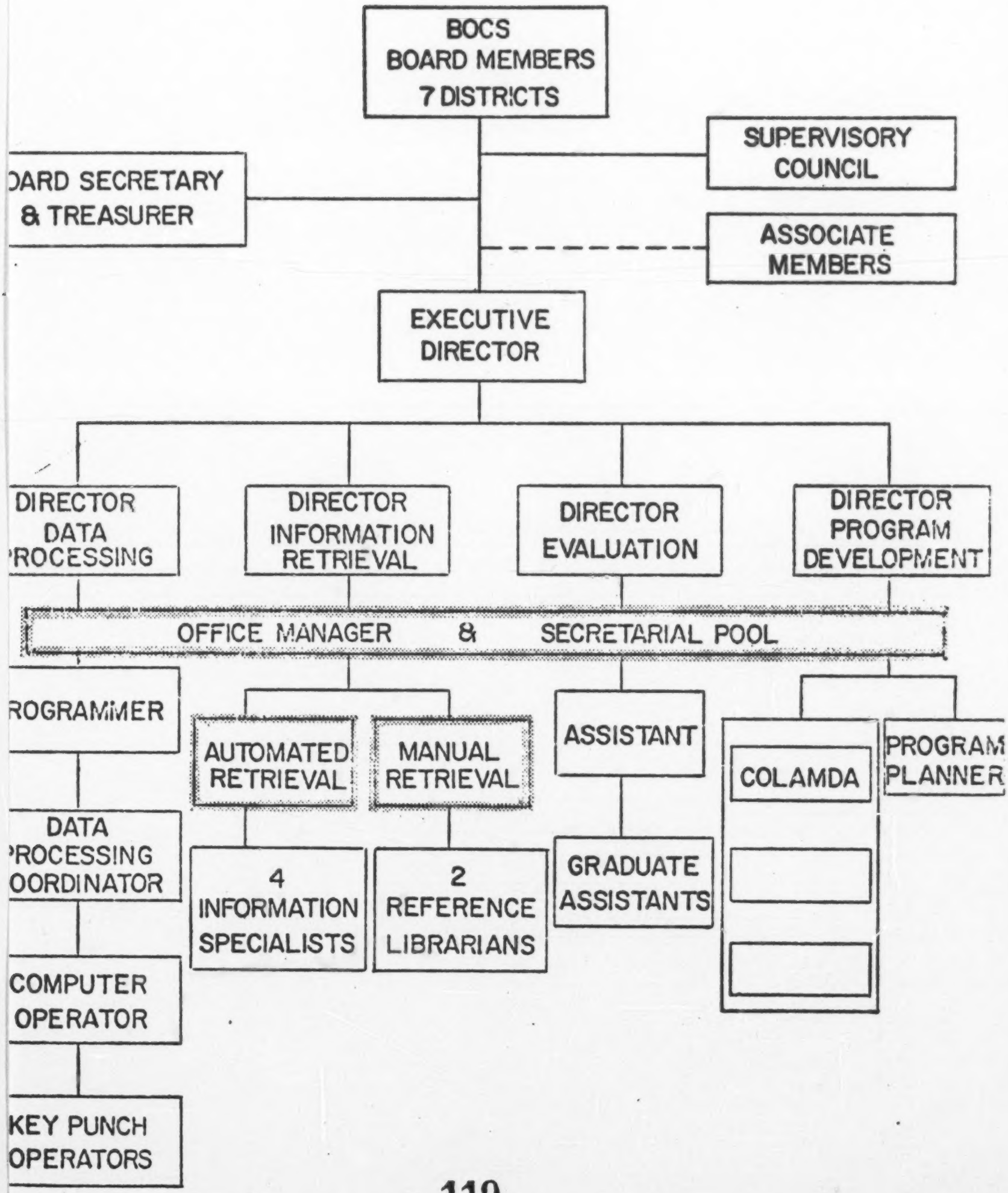
Interviews with key personnel on the Retrieval Center staff were conducted by the evaluators in May, 1971. The purpose of these interviews was to obtain information about the adequacy of the materials used in retrieval and the physical facilities at the Center. Also, it was hoped that interviews conducted anonymously by outside interviewers would uncover problems encountered by the staff or suggestions they might have for improving the Center.

Interviews were directed mainly at the Information Retrieval staff but also included some people from other sections who worked closely with the Retrieval section. An organization chart of the NCBOCES showing the relationship of the various sections is shown on the following page.

Described in the following sections are interview responses arranged according to major topic areas and a brief summary of all responses.

Adequacy of Data Base and Manual Search Materials

It was indicated by those interviewed that the ERIC system needs continual revision so that outdated materials are either updated or discarded. However, it was felt that these revisions should be made by the clearinghouses with the consultation of experts in specific subject areas rather than by the Resource Center staff. User evaluation of materials obtained by the Center, however, might aid the clearninghouses in the updating of ERIC entries. An additional weakness of the ERIC system cited was that


BOCS
BOARD MEMBERS
7 DISTRICTS
SUPERVISORY
COUNCIL
OARD SECRETARY
& TREASURER
ASSOCIATE
MEMBERS
EXECUTIVE
DIRECTOR
DIRECTOR
DATA
ROCESSING
DIRECTOR
INFORMATION
RETRIEVAL
DIRECTOR
EVALUATION
DIRECTOR
PROGRAM
DEVELOPMENT
OFFICE MANAGER & SECRETARIAL POOL
ROGRAMMER
AUTOMATED
RETRIEVAL
MANUAL
RETRIEVAL
ASSISTANT
COLAMDA
PROGRAM
PLANNER
DATA
ROCESSING
OORDINATOR
4
INFORMATION
SPECIALISTS
2
REFERENCE
LIBRARIANS
GRADUATE
ASSISTANTS
COMPUTER
OPERATOR
KEY PUNCH
OPERATORS

there are few entries in some subject areas, e.g., art.

The most frequently cited shortcoming of ERIC centered around the procedure for descriptor term assignment. It was pointed out that descriptors are not assigned uniformly by the clearinghouses and once assigned, are virtually impossible to change. Moreover, there is no procedure for adding descriptors.

Specific suggestions for adding to the data base included 1) the addition of descriptions of projects conducted within the seven NCBOCES school districts and the rest of Colorado, and 2) addition of the Current Index of Journals in Education. Steps have been taken to accommodate this latter suggestion.

Some of those interviewed stated that more important than increasing the data base entries, is a need to develop and install additional procedures to retrieve what is already in the computer. These procedures would include adding scope capability to the computer, and ability to program searches by identifiers and by exclusion rather than just inclusion, it was reported

Considering the proximity of the University of Colorado library as well as local library facilities, general satisfaction was noted with regard to materials available for manual searches. It was reported that there is a need to develop a more comprehensive file of community resources, such as libraries, local consultants, etc., so that when a question cannot be satisfactorily answered with the resources available at the Center, recommendations regarding where the information can be obtained can be made to users.

Another suggestion offered by those interviewed was the possibility of employing subject area specialists for both manual and computer searches,

when the Center has grown to the point where this would be economically feasible.

Finally, it was pointed out that, within the production area, there is a shortage of staff which has resulted in not being able to keep up with current periodical reviews and new product revisions.

Quality of Products

All interviewed felt that the new products were a significant improvement in the service offerred by the Resource Center. Ideally the packets should be updated each month; however, procedures for revision are informal and little updating has been accomplished since introduction of the new products. Although less critical, there are no regular procedures for updating manual search files.

To improve the quality of products now offered by the Center, many felt that greater effort should be made to tap user opinions of Resource Center materials.

Adequacy of Center's Equipment and Physical Plant

Several of those interviewed indicated that the Center was experiencing "growing pains;" and as a result, the physical plant was becoming crowded. There currently is a lack of space for storage of periodicals, microfiche, and other materials, it was reported. While this problem was not acute at the time of the interview, continued growth of the Center will necessitate expansion of the physical plant.

With regard to computer facilities, it was suggested that disk capabilities would speed up processing of requests as would installation of a scope system designed to allow the operator to see an abstract without having to have it printed. Furthermore, by use of this system, it is possible to determine the number of abstracts in the data base which would be retrieved by usage of a given descriptor.

User Rapport

All of those interviewed agreed that relations with users had been excellent. One person noted that rapport had been better with local users than those out of state. This was attributed to personal contact possible with local educators which had not been possible with people out of state. All felt that personal contact was essential to the success of the program and that future growth of the Center should include provisions for maintaining a close relationship with users.

A few suggested that more effort should be made to utilize the production staff in the development of materials and procedures which directly affect users.

User Training

A user training program should contain at least three features, it was reported. First, users should be familiarized with the Center and its operation. When feasible, visits to the Center should be encouraged. Second, users should be advised of what to expect from the Resource Center. Specifically, the ERIC system should be clearly explained, and its limitation specified. Third, users should be instructed in how to use

the Center, including training in how to clearly specify their requests. One of the most difficult problems reported was determining the real needs of users. Another suggestion indicated that training in the use of microfiche was needed.

Up to this point, some indicated that user information and training had been haphazard and that a more systematic plan of education was needed. With respect to contact persons or out-of-state coordinators, many felt that they were naive with respect to descriptor term usage and problem specification. It was, therefore, recommended that these people be given training in these areas.

Suggestions for Improving the Center's Operation

Several suggestions were made for improving the Center's service. These included:

1. There needs to be better coordination between the program development section and the Retrieval Center. To accomplish this, it was recommended that the previous policy of general meetings of the entire BOCES staff be reinstituted. These meetings, it was felt, enabled better coordination of activities as well as providing the staff with a better overall picture of the operation.

2. To eliminate misunderstanding between management and the production staff, it was recommended that a regularly forum between the two be established. Specifically, it was suggested that the information specialists be called upon more frequently regarding design of request forms, user evaluation questionnaires, and user education programs and materials.

3. Another suggestion involved using the Retrieval service to obtain information on which to base plans for future growth of the Center. While the service had been used at the outset for this purpose, it had not been used recently.

4. There is a need to interact more with users, it was reported; and as a result, it was suggested that the staff should get out, meet users, and discuss use of the Center's service. It was felt that the main vehicles for dissemination of information regarding the Center should be personal contact and workshops. A systematic dissemination program was stressed.

5. Many of those interviewed indicated that the user request form needed revision. From the information retrieval point of view, it is important to have a form that not only facilitates a fine definition of the problem at hand, but which also encourages specification of the greatest number of parameters of the problem so that if one search strategy is not successful, others may be tried.

6. Most interviewed felt that the Resource Center should be concerned with evaluating the impact of the information provided on education practices. Significant impact, it was pointed out, would be a strong selling point for the Center.

7. Additional efforts should be made to see that all potential users have access to microfiche readers. It was suggested that a separate project be funded to purchase and distribute microfiche readers.

8. To provide for the widest dissemination of information in the future growth of the retrieval service, it was suggested that the establishment of a satellite system may be necessary. This system would

receive user requests from the surrounding district and relay them to Boulder for processing.

9. The possibility was suggested of establishing a system whereby requests, which the Center did not have the resources to provide adequate information regarding, could be channeled to other retrieval centers specializing in different subject areas, e.g., medicine.

10. It was suggested that the user evaluation form should be revised, that the production staff should be consulted in this revision, and that separate user forms should be developed for manual and computer searches.

11. More effort, it was stated, should be spent on the long range planning of the development of the Center. Again, the production staff felt they should be consulted in the planning effort.

12. One of the most impressive features of the retrieval process was the group meetings held by the information specialists. The purposes of these meetings were to coordinate search activities and eliminate duplication of effort in the retrieval process. All interviewed agreed this procedure should be continued.

Conclusions

There was some indication that as a result of the rapid growth of the Center, some breakdown in communication between management and the production staff had occurred. If not corrected, it was felt by the evaluators that serious morale problems might develop as a result of these communications breakdowns.

Several suggestions were made for improving the Center's operation, many of which appear to be worthy of consideration by management and staff.

Overall, it was felt by the evaluators that the Resource Center was well organized, well managed, and competently staffed.

VII. In-Service Education Institute

To educate personnel directly involved in the functioning and general operation of the Retrieval Center, a two-week institute was held from July 20-31, 1970. The Institute was designed for state and local educators and included experiences designed to familiarize participants with the Center. A final report on the Institute including an evaluation of the Institute activities was prepared by Dr. Joseph Daley, Associate Director of the Institute, and submitted to the staff of the Retrieval Center. Because of the comprehensiveness and accuracy of this report, it is included as the remaining portion of this chapter. It was felt by the evaluation Project Director that the report itself is a highly appropriate manner in which to describe the special institute. Because of the interpretation contained in the report, no additional discussion of it was considered necessary.

I. Introduction: Perspective of the Institute

This report pertains to the Institute for Program Planning for educators from seven Northern Colorado school districts and State Department of Education personnel from Colorado, Utah, South Dakota, Washington, Oregon and Wyoming, conducted by the Human Factors Research Laboratory of Colorado State University, under contract with the Northern Colorado Educational Board of Cooperative Services and the Colorado State Department of Education.

The general purpose of the Institute was (1) to familiarize professional educators with techniques of empirical problem solving and handling educational data from a central source and (2) to lay the groundwork for a cooperative interstate network designed to facilitate the dissemination and utilization of educational information.

Practicing educators have a critical need to apply the vast quantities of existing educational literature to their every day problems. A Title III Project entitled "A Cooperative Community Educational Resources Center of the Boulder Valley Public Schools, Boulder, Colorado", was funded for the purpose of developing an automated educational information retrieval system, designed to identify, organize, store and supply such information to educators on request.

This Community Resources Center provides a communications link between the teachers, librarians and administrators and the new and latest research and developments in the field of education. It is able to provide the school personnel contacting the center with abstracts and summaries of new educational data in the form of printouts from the computer. In addition, manual search services by reference librarians are also available as a part of the service.

On July 1, 1970, the Resources Center became a unit of the Northern Colorado Educational Board of Cooperative Services, a cooperative board designed to provide program planning and evaluation services to seven school districts in northern Colorado.

Since the beginning of the Community Resources Center it was obvious that a real need existed for an educational training unit connected to the center. It was felt that educators did not know how to use the Center to their full advantage, nor were they trained in the latest techniques of empirical problem solving. This institute was proposed as one means of meeting this training need.

Since other states had expressed an interest in making use of the data base and services available through the Resources Center the institute was also designed to provide interaction with selected state representatives necessary to establishing a cooperative interstate network.

It was also felt that interaction between state and local educators, between those responsible for providing information and those requesting it, would enrich the total program.

II. Operation of the Institute

A. Objectives:

In order to accomplish the overall purpose of the institute the following objectives were established for the participants:

1. To increase skill and understanding in handling, using, and managing materials provided through an Educational Resources Center.
2. To gain in knowledge of ERIC and retrieval services in general.

3. To increase ability to use and evaluate ERIC and retrieval service materials.

4. To increase skill in using a problem solving approach.

5. To identify and begin to resolve a problem relevant to their professional assignment.

6. To develop a greater appreciation of the role of Resource and Development Centers in Education.

B. Participants

Two basic groups were represented in the institute. One group consisted of 13 educators with administrative responsibility from the seven school districts to be served by the Northern Colorado Board of Cooperative Services. The other group was made up of 9 educators from the state departments of education of Colorado, Wyoming, South Dakota, Utah, Oregon and Washington. Thus, the institute participants represented those educators needing information for purposes of problem solving and program planning and those educators responsible for providing the relevant data. Both groups, it seemed, could profit from the institute program as planned and from interaction with each other.

C. Institute Program

As indicated, the primary purposes of the institute were (1) to familiarize professional educators with techniques of empirical problem solving and handling educational data from a central source and (2) to lay the groundwork for a cooperative interstate network designed to facilitate the dissemination and utilization of educational information. The successive segments of the institute were developed from this basic goal.

The overall plan of the institute was to combine the knowledge and background experiences of the participating educators with the expertise of the Institute's staff and selected consultants considered experts in their fields. It was hoped this combination of experiences, ideas, training and expertise would provide a wholesome atmosphere for the free exchange of both concrete and abstract educational thinking related to the educational problems and programs of the participants. The results indicate that this hope was well realized.

More specifically, the program of the institute was divided into two one-week segments. The first week was designed to provide maximum input with sessions in evaluation, problem solving and information utilization. The participants were also asked to work through two simulated problems; one dealing with Differentiated Staffing and the other with Planned Program Budgeting Systems. Two groups were assigned to each problem. Their solutions were then compared with each other and with a third prepared by the institute staff. Early in the first week the enrollee's were also made familiar with the Educational Resources Center and with the process of requesting information for retrieval.

The second week was designed to allow the participants to bring their new learning to bear on a problem of importance to them and attempt to work it through to solution utilizing the full resources of the Center and the institute. Essentially, the mornings were used to discuss areas of concern to either the local educators or the state department personnel and the afternoons were devoted to work on the individual projects.

The Schedule of Events for the two weeks showing consultants and topics is presented in Table I.

Schedule of Events for BOCS Institute

July 20-31, 1970

	Monday 20	Tuesday 21	Wednesday 22	Thursday 23	Friday 24
A.M. (8:00 Coffee -- 8:30 Start)	Housekeeping Introduction Overall Objectives Dr. Sjogren	(Boulder) Dr. C.O. Neidt Center Presentation (McCleary)	8:30-10:00 -Quality Control Panel Tally-Albright Ervin-Lundquist Brown-McCleary (How We Evaluate) Dr. Sjogren sets stage for next 3	Research to Practice Dr. Crum 8:30-9:30 "PROCEDURES" Dr. Sjogren Dr. Daly	Reports from problem groups
P.M.	Dr. Lynne Svenning "PEP CENTER"	Divide Resources Staff with Group -Take Request -Tour Computer Facilities -Consultants Available for Individual Conferences	Lunch Mr. Charles Hoover USOE "OBJECTIVES" Stating Objectives Behavorially Dr. Roger Duncan (2 groups est. PPBS Differentiated/Staffing)	"EVALUATION" Dr. Sjogren	Evaluation of first week Overview of second week

The main meeting room for the sessions is Room 180 in the CSU Student Center.

TABLE I (Cont.)

	Monday 27	Tuesday 28	Wednesday 29	Thursday 30	Friday 31
A.M.	-Adm. Housekeeping BOCS Panel -Dr. Turner -Dr. Sjogren -Wm. McCleary 8:30-10:00 -- Mr. Jim Simpson A Plan for a State Network	Miss Bobbie Young Colorado State Plan Mr. Simpson-Reactor 8:30-10:30 -- McCleary: 6 State People Network -- Individual Study	State Assessment (Dr. Olson) (Dr. Duncan) (Dr. Pipho) Contract Accreditation Discussion and Reaction	Dr. Robert Gilberts "Views on Educational Change" Dr. Nick Gangwich "Systems Approach to Planning"	Participants Panel (Reactio to workshop Return Paper to Participants
P.M.	Distribute print outs on problems with explanation-Center Staff	Individual Study on Problem Area	Individual Study on Problem Area	Project Due	

D. Evaluation.

Evaluation of the institute was provided for in two ways.

First, three five-point rating scales were devised to allow the participants to rate (1) the value of the weekly components of the institute, (2) the extent to which the stated objectives had been realized and (3) their satisfaction with the staff and other general aspects of the institute. Second, a panel of four participants, two representing state level people and two from the local administrators, was identified on the second day of the institute and asked if they would be responsible for critically responding to the institute and lead an evaluative dialogue on the last day.

The responses gathered at the end of the first week and related to the content of that week are summarized in Table II. In general, the responses were positive, the presenters were well received and the material covered was both relevant and useful. The highlight of the week appeared to be the day spent at the Boulder Center.

The ratings of topics covered during the second week are summarized in Table III. Once again the responses were generally positive but with more variability reflected than was true of the first week. One explanation for this has to do with the two basic groups comprising the institute. During this second week some topics were rather directly related to the local school administrators and others to the State Department personnel. Thus, one group could see the presentation as very applicable while for the other group it would have limited value. Also, it was apparent that one presentation was too technical and required a background that the majority of the participants did not have.

TABLE II

First Week

INSTITUTE EVALUATION FORM

B. Indicate the degree of value to you of each of the following parts of the institute.*

	Very Low	Low	Moder-ate	High	Very High
1. Managing Changes Lynn Svenning	0	3	6	8	1
2. Boulder Tour	0	0	1	12	6
a. Model for Problem Solving Charles O. Neidt	0	1	6	7	6
b. Information Retrieval Bill McCleary	0	0	3	7	9
c. Individual Problem Description	0	1	7	8	3
3. Quality Control Panel	0	0	8	7	4
4. Common Problem Simulation Exercise	0	0	1	9	4
a. Objectives (Roger Duncan)	0	1	6	8	4
b. Procedures (Joe Daly)	0	0	6	10	3
c. Evaluation (Doug Sjogren)	0	0	2	11	7
d. Group Reports on Problems	0	1	4	9	6
5. Entire first week	0	0	3	11	6

*This table reflects the number of participants responding at each level of the scale.

TABLE III

Second Week

INSTITUTE EVALUATION FORM

Indicate the degree of value to you of each of the following parts of the institute.*

	Very Low	Low	Moder-ate	High	Very High
1. BOCS Panel	0	0	5	13	2
2. Plan for a State Network (Jim Simpson)	0	1	10	8	0
3. a. State Plan for Information Retrieval (Bobby Young)	0	4	12	3	0
b. Discussion	0	3	11	5	1
4. a. State Assessment and Contract Accreditation (Colorado State Department Staff)	1	2	6	6	2
5. Views on Educational Change (Bob Gilberts)	0	0	1	4	14
6. Systems Approach to Planning (Nick Gangwich)	4	6	5	4	0
7. Individual Problem Project	0	1	3	10	4
a. Information Retrieved	0	0	5	9	4
b. Individual Study	0	1	5	9	2
8. Entire 2nd week	0	0	5	13	1
9. Total Institute Program	0	0	3	16	1

*This table reflects the number of participants responding at each level of the scale.

From the standpoint of the participants it appears that the stated objectives of the institute were achieved. These results are shown in Table IV. The enrollees were also well satisfied with the availability of the institute staff and the quality of help received from them (Table V).

While the physical facilities were also quite satisfactory, it is apparent from Table V that some of the participants felt the pre-institute information was inadequate. It would seem from the variation in response, that communication with some enrollees was not as complete as with others.

The evaluation panel conducted a useful and well-organized assessment of the institute on the final day. Once again, response from the participants was positive, reflecting time well spent. One point discussed at length had to do with the heterogeneity of the group. While there was some feeling that the institute would have been more successful if the state and local groups had not been invited at the same time, the majority feeling was that interaction contributed greatly to the program. As one state participant stated, "---I think this has been good for us because a lot of times we just have tunnel vision in our own areas and we aren't able to understand some of the problems that they (local) have." (Alice Spengler) This was reinforced by one of the local people saying, "I think it is short sighted of the network media people if they don't feel that they have some responsibility for transmitting the other kinds of information that we got in this workshop to their users. ---you can have the best network in the world and still fall flat on your faces if the people who are your users don't have a resource

Second Week

INSTITUTE EVALUATION FORM

C. Indicate your degree of satisfaction with the following aspects of the institute.

	Very Low	Low	Moder-ate	High	Very High
1. Adequacy of information about the institute prior to your arrival.	2	1	7	7	2
2. Physical facilities					
a. Meeting Rooms	0	0	1	9	9
b. Housing (Campus)	0	0	0	6	2
c. Eating (Campus)	0	0	2	4	14
3. Availability of staff for help and consultation.	0	0	1	7	11
4. Quality of help received from the staff.	0	0	3	6	10
5. Free Time	0	1	3	8	7
6. Institute Program	0	0	3	11	5

*This table reflects the number of participants responding at each level of the scale.

TABLE IV

Second Week

INSTITUTE EVALUATION FORM

A. The main objectives of the institute are listed below. Using the five point scale provided, indicate the degree of attainment of each objective at this point in the workshop.*

	Very Low	Low	Moder-ate	High	Very High
1. To increase skill and understanding in handling, using, and managing materials provided through and Educational Resources Center.	0	0	0	14	6
2. To gain in knowledge of ERIC and retrival services in general.	0	0	4	13	3
3. To increase ability to use and evaluate ERIC and retrieval service materials.	0	0	6	10	4
4. To increase skill in using a problem solving approach.	0	0	7	10	3
5. To identify and begin to resolve a problem relevant to your professional assignment.	0	0	5	10	5
6. To develop a greater appreciation of the role of Resource and Development Centers in Education.	0	0	2	10	7

*This table reflects the number of participants responding at each level of the scale.

upon whom they can call in terms of how best to use the available information." (P. L. Schmelzer)

The evaluation panel ended with the following observations:

"I will just say again that it seems to me from the comments that you have made that it has been a very positive experience and beneficial in various ways to various people." (Noble Freden)

"I have something here that reflects my attitude about the workshop. The statement says 'the purpose of communication among scientists is simply to prevent duplication of effort and to enable scientists to profit from and build upon each others work.' I am more convinced of that than ever after this workshop. I think that I can profit from and build onto the things I have learned you are doing in your states and communities. We'll see how that works when I get back." (Dorothy Alexander)

The overall conclusion appears to be that although some aspects could have been improved, the institute program was well-conducted and effective. However, the extent to which the program of the institute results in better programs and practices in the states and school districts represented will provide the final evaluation.

III. Conclusions:

It would appear that the general purpose of the institute was realized. The participant evaluation indicates that the main objectives were accomplished and that the experience was a beneficial one.

As is usually the case in such workshops, there were important outcomes in addition to those stated specifically as objectives. Some of these warrant comment.

Mention should be made of the task oriented nature of this particular group. Free time for independent study can often be a problem. This group was highly motivated and worked extremely well in completing projects and applying the concepts and skills introduced in the formal sessions. This willingness to work undoubtedly contributed greatly to the success of the institute.

The staff of the institute and of the Northern Colorado Educational Board of Cooperative Services had the opportunity to become well acquainted with those educators with whom they will be working during the coming year. This cannot help but facilitate the application of program planning and evaluation to the problems currently existing in the school districts represented.

The final point can best be illustrated by quoting from the evaluation panel discussion. "I have been impressed from the very first day because somebody in this workshop established a climate of dialogue and reception that was more open than I have ever observed in any other similar experience. No one from here turned me off...There was a free-for-all of people with diverse background that is unique in my experience and I wish I had the key to developing that kind of atmosphere in groups that I may have. I saw better dialogue here than I have with my own staff and I got more communication experience with a positive nature than I have had in any similar experience." (Edward Ronay[illegible])

APPENDICES

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July 20 - 31, 1970

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INSTITUTE ON PROGRAM PLANNING

July 20 - 31, 1970

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HUMAN FACTORS RESEARCH LABORATORY

June 29, 1970

It was a pleasure to learn from Dr. Walter Turner of the Northern Colorado Educational Board of Cooperative Services that you have expressed interest in attending the Colorado State University Institute on Handling Educational Information from July 20 to July 31, 1970. The purpose of this letter is to describe the Institute in general and to request preliminary information about your plans to attend.

The Institute will be held on the campus of Colorado State University. Because Fort Collins, the city in which CSU is located, does not have direct airline connections, we will furnish ground transportation to and from the airports in either Denver or Cheyenne. Therefore, it is necessary for us to know your arrival and departure times, if you plan to fly. If you drive, complimentary campus parking will be furnished. We hope that participants from out of town can arrive and be settled by Sunday evening, July 19. Either on-campus residence hall rooms (at $6.50 per single or $4.50 per double occupancy) or lodging at motels in the area will be available to participants. The nearest motel is approximately eight blocks from the Institute meeting rooms; the average distance to motels is about twenty blocks. Whereas the residence halls are relatively plain, most conference participants who use them consider them adequate.

The introductory session of the Institute will be held Monday, July 20, at 8:00 a.m., in Room 180 of the CSU Student Center. At this time initial introductions will be made, details of the workshop discussed and arrangements made for such matters as registration. The remainder of the two week's activities are outlined on the enclosed schedule. The typical Institute day will be 8:00 a.m. to about 5:00 p.m. We expect to conclude about noon on Friday, July 31.

From examination of the schedule you will note that there are both formal presentations and workshop activity during the two weeks. To

assure that Institute participants have adequate opportunities to apply the concepts about which they are studying, two kinds of practical workshop activities are planned: (1) a common "problem" will be identified, researched, and worked through to solution as an example exercise, and (2) each participant is being asked to identify in advance a problem of particular interest to him that can be used as the basis for individual study.

Coffee and rolls will be available each morning and a catered lunch will be provided for participants each noon at no cost. Each participant will be responsible for his own evening meals, but all or part of the group may wish to eat together in some of the local "gourmet establishments" on an informal basis. Dress for the Institute will be casual. Since nights can be cool in Fort Collins, a light wrap for evening wear is suggested.

A travel and lodging questionnaire, to be completed and returned at your earliest convenience, is enclosed. Although some of the information may seem unusually detailed, our previous experience with Institutes has shown that the more information we have about our participants, the more effective we can be in making this Institute a highly satisfying and meaningful experience for you.

Sincerely,

Charles O. Neidt

Charles O. Neidt, Director
Institute on Evaluation Techniques

CON:jo
Enclosures

TRAVEL AND LODGING INFORMATION

Institute on Evaluation Techniques
Colorado State University, Fort Collins, Colorado

Name_____

Position_____ Institution or Agency_____

Business Address_____

Telephone_____

Education:

Dates Attended	Institution	Major	Degree
_____	_____	_____	_____
_____	_____	_____	_____

Travel Arrangements - ARRIVAL

_____I will be driving my own automobile. My estimated time of arrival in Fort Collins is_____.

_____I will be arriving by air at_____on_____ Airline, Flight No._____, arriving at_____. I will need transportation from_____to Fort Collins.

_____I will be arriving by rail at_____on_____ Railroad, arriving at_____. I will need transportation from_____to Fort Collins.

Travel Arrangements - DEPARTURE

_____I will be driving my own automobile. My estimated time of departure from Fort Collins is_____.

_____I will be leaving by air from_____on_____Airline Flight No._____at_____. I will need transportation.

_____I will be leaving by rail from_____on_____Railroad, departing at_____. I will need transportaion.

Continued to next page.

Lodging

____I will be staying in the CSU residence halls for the following nights.

_____Single occupancy($6.50)

_____Double occupancy($4.50)

___Sun. ___Mon. ___Tues. ___Wed. ___Thurs. ___Fri. ___Sat.

___Sun. ___Mon. ___Tues. ___Wed. ___Thurs. ___Fri.

_____I will make my own arrangements for lodging.

_____I wish to stay in a motel or hotel and would like the Institute Staff to reserve a room in my name in the following price range: $_____to$_____ for the following nights:

___Sun. ___Mon. ___Tues. ___Wed. ___Thurs. ___Fri. ___Sat.

___Sun. ___Mon. ___Tues. ___Wed. ___Thurs. ___Fri.

Return Address: Human Factors Research Laboratory
N125 Morgan Library
Colorado State University
Ft. Collins, Colorado 80521
Telephone: 491-5206

MEMORANDUM

July 14, 1970

TO: Institute on Handling Educational Information Participants

FROM: C. O. Neidt, Director

SUBJECT: Final Institute Arrangements

Details are now being finalized for the institute. Plans are going ahead essentially as outlined in our first letter.

Participants staying on campus will be in Parmelee Hall. Room fees can be paid at the registration desk.

Drivers will meet those participants coming by plane at Stapleton Airport in Denver at the times indicated on the information forms which were returned. Participants should meet their driver in front of the bank entrance on the lower lobby of the Airport building. This is near the baggage claim area.

Participants arriving Sunday by private car can go directly to Parmelee Hall and check in. (A map of campus is enclosed.)

All institute activities will be held in the CSU Student Center, including the noon lunches: Coffee and rolls will be available in the main meeting room (Room 180) at 8:00 a.m., Monday. Formal institute activities will begin at 8:30 a.m.

If you have any questions, please call #303-491-5206 and ask for Jeanne; otherwise, we'll see some of you Sunday and all of you Monday morning.

OBJECTIVES FOR THE PPBS PROJECT

Implementation of the Planned Program Budgeting System will be evidenced by attainment of the following objectives.

1. The program components will have been identified and budgeted.

2. Progress will have been made toward defining objectives for each program component.

3. Alternative procedures will have been identified for each program component.

4. The staff will understand the purposes and functions of PPBS.

5. The staff will be supportive of PPBS.

6. A report of school operations will be prepared for the community using the PPBS and will be favorably received.

7. The accounting system will have been reorganized to the PPBS format with minimal disruption.

8. The system is demonstrated to be operable within the resource constraints of the district.

PROCEDURES FOR THE PPBS PROJECT

1. Identify the program components.

2. Assign responsibility to appropriate staff to define objectives, and identify alternative procedures and respective costs. (Staff involvement should be as complete as possible and continue throughout the year.

3. Reorganize the accounting system to the PPBS format through inservice training of key personnel and/or employment of necessary additional staff.

4. Initiate an information program to familiarize staff and school board and community with PPBS and its implications.

5. Establish a two-way communication channel between PPBS staff and the school staff, school board and community.

6. Establish a format for periodic special reports to provide information on the progress of the project to be concluded with a comprehensive year-end report.

The purpose of this evaluation is to assess the effects of the first year's operation of a PPBS system in a school district. The evaluative information will be obtained primarily for the administrative personnel for their decision making. Those audiences that are interested in educational accountability should also be considered as comsumers of the evaluation. The evaluation design is presented in the following outline.

Intents	Observations
Antecedents	
1. There is a general understanding of PPBS by the board and school staff.	1. Administer a test to a sample or conduct interviews. In-service type training may be necessary.
2. The school staff is not unfavorable to the idea of PPBS.	2. Assess attitudes with a scale or by interview.
3. A trained staff is available for implementing the PPBS project.	3. Observation of credentials of staff and consultants.
4. Resources in terms of equipment and materials are adequate for implementing the PPBS system.	4. Observation and inventory.
Transactions	
1. The PPBS system is implemented on schedule as outlined for the first year.	1. Log of activities of PPBS kept on a weekly basis.
2. The implementation of the system is accomplished with minimal disruption.	2. Log and observation of critical incidents such as late payrolls, computer breakdowns, etc.
3. The school staff is kept aware of the developments in implementation of the PPBS system.	3. Log. Description of communication between PPBS staff and school staff. Periodic interviews with samples of staff.
4. The school staff is able to work on necessary aspects of PPBS such as forming program budgets, defining alternatives, and detailing objectives.	4. Description of provision for this activity. Interviews to assess staff time taken and feelings about these tasks.

Intents	Observations
Outcomes	
1. Each program will have been identified and a budget made for it.	1. Examine product. Judgment of outside panel of adequacy of program identification.
2. Each program component will have accomplished an identification of alternative procedures and a statement of objectives.	2. Examine products. Again an outside panel may judge the adequacy of the products. The products should indicate progress toward rather than attainment of the end products.
3. The board and staff will exhibit increased understandings of PPBS.	3. Repeat procedures under antecedent number one.
4. The board and staff are favorable to continuation of the project.	4. Assess attitudes with scale or interview.
5. The system is operable within the resource constraints of the district.	5. Audit of year's costs and examination of projected costs.
6. A report of the activities of the school is issued to the community which exhibits the philosophy of accountability and the community reaction to the report format is favorable.	6. Examine report. Interview sample of community to elicit reactions. Be careful to get reactions to format and completeness of report, and recognize that there will be variance on the content. Thus we would hope that there is general agreement that the report is complete and meaningful. On the other hand, there may not be general agreement on the interpretation of the content of the report.
7. The accounting and data handling system is revised to the extent intended for the first year.	7. Observation of progress made in this area.

OBJECTIVES FOR DIFFERENTIATED STAFFING PROJECT

General

1. The staffing pattern will have been implemented as intended in the selected areas. This objective will have been realized if the following sub-objectives have been attained.

   a. Qualified staff has been employed as defined by the pattern.

   b. There is minimal conflict and confusion in effecting the pattern.

   c. Students receive more individual attention and can pursue independent study.

   d. The performance of the students is maintained at a high level in terms of achievement, school activity, and socialization.

   e. The students' feelings about the project and school in general are favorable.

   f. The staff maintains interest and commitment to the Differentiated Staffing Pattern.

   g. The community is aware of and acceptant of the project.

   h. There is evidence of increased effectiveness of teaching technique in terms of greater variety of experiences provided, techniques employed, and materials and equipment used.

2. The staffing pattern will have been implemented within the resource constraints of the district. This will be evidenced by:

   a. Adequacy of the operational budget.

   b. Feasibility of projected budgets.

PROCEDURES FOR THE PPBS PROJECT

1. Identify the program components.

2. Assign responsibility to appropriate staff to define objectives, and identify alternative procedures and respective costs. (Staff involvement should be as complete as possible and continue throughout the year.

3. Reorganize the accounting system to the PPBS format through inservice training of key personnel and/or employment of necessary additional staff.

4. Initiate an information program to familiarize staff and school board and community with PPBS and its implications.

5. Establish a two-way communication channel between PPBS staff and the school staff, school board and community.

6. Establish a format for periodic special reports to provide information on the progress of the project to be concluded with a comprehensive year-end report.

DESIGN FOR EVALUATION OF DIFFERENTIATED STAFFING PROJECT

I. Who is the evaluation for?

The principle audience of this evaluation is the administrative staff of the school district and the policy board. The information will be used primarily for making decisions about the project in general and about placement of staff members. Other audiences that would have an interest in the evaluation are the staff, the students, the constituents, and other schools.

II. Evaluation Design

Intents	Observations
Antecedents	
1. The school board and staff understood the concept of differentiated staffing.	1. Different observation procedures may be used such as: a. a test b. an interview c. a questionnairre The observation would be obtained early enough so that decisions might be made regarding the necessity of some kind of in-service training.
2. The school board and staff are not opposed to instituting differentiated staffing.	2. Observation procedures would be similar to those for number one.
3. A staffing plan is developed that is consistent with the abilities of existing and/or available staff.	3. a. Description of staff characteristics. b. Availability of needed staff c. Submit staffing plan to panel of 3 experts for judgment of its feasibility. These observations should also be made early (before the program starts) to optimize the probability of workable plan being instituted.
4. Adequate materials and resources are available for implementing the plan.	4. Inventory of equipment, material, facilities, and other resources with judgments made of their adequacy and appropriateness for the plan.

Intents	Observations
Transactions	
1. The staff members assume roles that are consistent with their job definition.	1. Gather information on this via interview and observation. Sample staff members at regular intervals through the year.
2. The classroom management is conclusive to learning.	2. a. Observation of what occurs in the classrooms to identify teaching techniques used and to assess classroom climate. b. Interviews with samples of students.
3. There is evidence of increased individualization of instruction.	3. Observation
4. Facilities, material, and equipment are used to capacity.	4. a. Observation and interview b. Inventory of materials used and observe wear and tear on equipment.
5. The overall plan is implemented as intended.	5. Observation and interview.
Outcomes	
1. The staff maintains enthusiasm and commitment to the staffing situation.	1. Attitude scales, observation, and interview during the year. Be sensitive to critical incidents as they might occur.
2. Students are favorable to the procedure and school in general.	2. Same procedures as for number one.
3. The performance of the students is maintained at the desired level. (This outcome is complex and should be broken down into its components for the evaluation. Not only would one examine different areas of performance, but also characteristics of students).	3. a. Performance on tests used in school testing program. b. Performance on teacher-made evaluation instruments. c. Performance on instruments built especially for the program evaluation. d. Judgment of quality of student products like papers, art work, etc. e. Evidence on participation in school and community activities from interview.

(Continued)

Intents	Observations
Outcomes (Cont.)	
	f. Administer instruments or obtain data periodically from different samples of students. g. Be sensitive to critical incidents and unanticipated outcomes.
4. The project will be demonstrated to be feasible within the resource constraints of the district.	4. Audit of budget and analysis of projected costs.

INSTITUTE EVALUATION FORM

A. The main objectives of the institute are listed below. Using the five point scale provided, indicate the degree of attainment of each objective at this point in the workshop.

	Very Low	Low	Moder-ate	High	Very High
1. To increase skill and understanding in handling, using, and managing materials provided through an Educational Resources Center.	1	2	3	4	5
2. To gain in knowledge of ERIC and retrival services in general.	1	2	3	4	5
3. To increase ability to use and evaluate ERIC and retrieval service materials.	1	2	3	4	5
4. To increase skill in using a problem solving approach.	1	2	3	4	5
5. To identify and begin to resolve a problem relevant to your professional assignment.	1	2	3	4	5
6. To develop a greater appreciation of the role of Resource and Development Centers in Education	1	2	3	4	5

INSTITUTE EVALUATION FORM

B. Indicate the degree of value to you of each of the following parts of the institute.

1st Week	Very Low	Low	Moder-ate	High	Very High
1. Managing Changes Lynn Svenning	1	2	3	4	5
2. Boulder Tour	1	2	3	4	5
a. Model for Problem Solving C. O. Neidt	1	2	3	4	5
b. Information Retrieval Bill McCleary	1	2	3	4	5
c. Industrial Problem Description	1	2	3	4	5
3. Quality Control Panel	1	2	3	4	5
4. Common Problem Simulation Exercise	1	2	3	4	5
a. Objectives (Roger Duncan)	1	2	3	4	5
b. Procedures (Joe Daly)	1	2	3	4	5
c. Evaluation (Doug Sjogren)	1	2	3	4	5
d. Group Reports on Problems	1	2	3	4	5
5. Entire first week	1	2	3	4	5

INSTITUTE EVALUATION FORM

Indicate the degree of value to you of each of the following parts of the institute.

2nd Week	Very Low	Low	Moder-ate	High	Very High
1. BOCS Panel	1	2	3	4	5
2. Plan for a State Network (Jim Simpson)	1	2	3	4	5
3. a. State Plan for Information Retrieval (Bobby Young)	1	2	3	4	5
b. Discussion	1	2	3	4	5
4. a. State Assessment and Contract Accreditation (Colorado State Department Staff)	1	2	3	4	5
5. Views on Educational Change (Bob Gilberts)	1	2	3	4	5
6. Systems Approach to Planning (Nick Gangwich)	1	2	3	4	5
7. Individual Problem Project	1	2	3	4	5
a. Information Retrieved	1	2	3	4	5
b. Individual Study	1	2	3	4	5
8. Entire 2nd Week	1	2	3	4	5
9. Total Institute Program	1	2	3	4	5

INSTITUTE EVALUATION FORM

C. Indicate your degree of satisfaction with the following aspects of the institute.

	Very Low	Low	Moder-ate	High	Very High
1. Adequacy of information about the institute prior to your arrival	1	2	3	4	5
2. Physical facilities					
a. Meeting Rooms	1	2	3	4	5
b. Housing (Campus)	1	2	3	4	5
c. Eating (Campus)	1	2	3	4	5
3. Availability of staff for help and consultation.	1	2	3	4	5
4. Quality of help received from the staff.	1	2	3	4	5
5. Free time	1	2	3	4	5
6. Institute Program	1	2	3	4	5

QUESTIONNAIRE
(midterm)

If you have comments, criticisms, suggestions, etc. on any of the following, write them in the provided space.

Administration of the institute_____

_____

_____

_____

Facilities for the institute_____

_____

_____

_____

Things I hope are covered next week_____

_____

_____

_____

Other_____

_____

_____

_____

QUESTIONNAIRE
(end of session only)

1. What two things were most beneficial for you in the institute? Please indicate why these have been beneficial.

a. _____

_____

_____

_____

b. _____

_____

_____

_____

2. What two things were least beneficial for you in the institute? Please indicate why these have been least beneficial.

a. _____

_____

_____

_____

b. _____

_____

_____

_____

3. We would appreciate any comments or suggestions you have about the operation of or your relationship with the Northern Colorado Educational Board of Cooperative Services.

_____

_____

_____

_____

_____

VIII. Reaction of University Teacher Educators to the Retrieval Center

Realizing that the Retrieval Center would be used to a limited extent by teacher education individuals at the university level, interviews were conducted with two university-level educators. Both of these individuals carried major responsibility for certification of under graduate-graduate programs. They are individuals who are also in contact with other professional educators throughout the region. Because of the possible implications of their remarks for future operation of the Center, an interpretation of their comments is included.

Teacher educators interviewed felt that the service provided by the Retrieval Center is best suited for practitioners. They felt that the service would have only limited value at the graduate level in that the depth required for training of teachers on the graduate level probably would require extensive study in university libraries and would be primarily concerned with research reports rather than general publications. They were quick to point out, however, that the service probably would be appropriate for "practitioners to be." The reactions were based upon their own personal experience and experiences of their graduate students.

In reporting experiences which other users had had, they indicated that reactions of other teacher educators depended upon the degree of discrimination required and the depth involved in the study of a given area--little discrimination and minimal depth uses resulting in highly positive

reactions and high discrimination and maximum depth study resulting in negative reactions. They pointed out that there does exist a hope among teacher educators that Retrieval Center concepts (ERIC, etc.) can become valuable contributions to educational practice. They felt that much remains to be done in training practitioners to use information centers as part of their professional education.

Both individuals felt that the main purpose of the Retrieval Center should be to assist practitioners rather than graduate students or under graduate students. To this end, they emphasized the importance of training practitioners to use the services while in school, but they felt that the services had very limited direct application to graduate study.

Neither teacher educator interviewed felt that the Retrieval Center was having a major impact on educational practices at this time and that consideration should be given to a larger unit for handling the service than a cooperative board. It was suggested that a regional unit would be more appropriate than the Board unit.

In discussing impact, the need for quality controls on the information going into the data base was stressed. Greater precision in the assigning of descriptor terms to the original abstracts was also stressed. It was pointed out that practicing classroom teachers were probably not in a good position to evaluate the validity of research projects reported to them and that such intermediate interpretation of projects as are contained in the "new products" line would be appropriate.

It was felt that need for answers to specific problems was the basis for motivating educators to use the Center. It was also pointed out that many practicing educators may have the erroneous impression that simple

answers to complex problems could be obtained from using the Center.

Both teacher educators expressed doubts about the amount of Federal funds being spent for retrieval and dissemination. They expressed concern about the information going into the Center and the general apathy of educators regarding use of such systems as ERIC and the Center. Both stressed the need for more accurate categorizing of information and for comprehensiveness in coverage.

In summary, the teacher educators interviewed felt that the value of the Center rests with its use by practitioners rather than educational theorists or graduate researchers. To this end, they suggested that training to use the retrieval concept should be a part of the professional preparation of teachers, but that administration of the Center should rest with a regional rather than a board of cooperative services unit. They also emphasized the need for accurate descriptorizing and comprehensiveness of information put into the data base.

IX. Discussion and Recommendations

This report has been organized into autonomous sections so that reference could be made readily to data from a particular source related to a given facet of the operation of the Retrieval Center. This method of organizing the report has resulted in discussion and recommendations located within each chapter. Rather than duplicating those portions of each chapter in this section, the evaluation will be discussed in relation to specific questions listed in the proposal. These questions are directed to the general concept and overall operation of the Center rather than to specific facets of its operation. They are also useful frames of reference for presenting the final recommendations.

Who Uses the Center Most Frequently?

Detailed consideration of this question was presented in Chapters II and III. A summary response to the question is as follows: "Practitioners (Administrators, specialists, and classroom teachers) who are interested in changing the manner in which they fulfill their professional functions." In considering this abbreviated response, emphasis should be placed upon practitioners as opposed to theoreticians, innovators versus individuals wishing to perpetuate the status quo, and problem solvers versus individuals seeking to apply new ideas in the absense of problems. Before a response to this question can be made conclusively, however, the assumption that various kinds of professional educators had equivalent knowledge of the Center must be met. As the Center operated through 1970,

this assumption could not be made. In other words, it is conceivable that the relatively large proportions of administrators and specialists using the Center (in relation to the size of their population) in contrast to the lesser proportion of classroom teachers using the Center (in relation to the size of their population) may be a function of knowledge about the Center and convenience in using the Center rather than a difference in interest. It will be interesting to follow user characteristics in a longitudinal fashion in the years ahead to determine whether the numbers of teachers using the Center will increase proportionally as they become more familiar with its functions and its availability. It is likely that the generalization will hold, however, that those who use the Center are practitioners and innovators.

What Uses Do Educators Make of the Information Services Provided by the Center?

Detailed response to this question was included in Chapters III, IV, and V. In general, the data indicated that the information supplied by the Center is being applied to decisions about immediate operations of schools. The most frequent use of the Center appeared to be in instances where a problem exists and a problem solver is seeking possible solutions or in instances where a preliminary solution has been identified and background information about it is needed. There was relatively little evidence that the information supplied by the Center was used for personal development of the requestor or the satisfaction of the requestor's curiosity about personal questions.

What Questions Coming to the Center are Most Prevalent?

As indicated in Chapter II, administrative procedure and organization, instructional procedure and techniques, and curriculum development were the subject matter areas most frequently involved in requests. Since the Center's inception, greatest proportionate increase has occurred in the category administrative procedure and organization. In terms of specific "non-administrative" topics, most frequent reference has been made to counseling and student personnel services, library and information services, science and mathematics, and social science.

What Kinds of Materials Are Needed at the Local Level?

Generally speaking, users have been well satisfied with the materials provided by the Center (except in those instances where microfiche readers were unavailable), but they indicated a desire to learn about innovative programs in their geographic area; opportunities to inspect teaching materials so that specific choices might make adoption decisions; and community resources for reference in teaching. Whereas these kinds of materials are beyond the scope of any dissemination Center to provide, they are suggestions for directions to be explored in the future. Evidence obtained in this project suggests that supplying information to schools is only the first of several steps necessary to produce educational change. The Center may wish to explore participation in additional stages of the change process in the future. If so, addition of other services must be explored.

What Impact Does the Center Have on Local Educational Practice?

With the design of the present investigation, it was not possible to assess the impact of the Center on actual practice accurately. Likewise, participation in Center activities over long periods of time will be necessary to answer this question fully. On the other hand, evidence was obtained that changes associated with Center requests can be identified by administrators of participating units. Further, evidence was obtained from users themselves that information provided by the Center was applied to the solution of problems. These kinds of evidence suggest that the Center is having some, although an indeterminate amount, of impact on educational practice. Much more elaborate and costly procedures of investigation than were possible in the present project will be required to answer this question adequately.

What Factors Contributed Toward the Motivation of Educators to Use the Center?

Data obtained from all sources consulted in the present study indicate that the solution of problems is the primary factor contributing toward motivation to use the Center. A secondary factor related to the general improvement of educational practice. Both of these factors are, of course, predicated on the assumption that prospective users are familiar with the existence of the Center and have its services readily available to them.

Geographically Speaking, How Much Area Can One Service Center Cover?

Evidence from the present evaluation suggests that one service center can cover a geographic area comprised of several states when it is assumed that 1) prospective users can attend training sessions to familiarize them with use of the Center, 2) referral networks are available which make it convenient to use the Center, and 3) close liaison exists between field

coordinators and Center staff. Obviously there is a limit to the geographic area which can be served by a Center, but available data suggest that this limit is outside a several-state area. In considering this question, it is important to recognize that the states included in the present project are "sparsely-populated" or "low density" states. Extension of any generalizations drawn from the present study must consider the size of the population served as well as geographic area.

How Should Informational Materials Requested at the Local Level be Stored in Terms of Magnetic Tapes, Discs, etc.?

Very limited evidence suggests that magnetic tapes are satisfactory for Centers with limited use, but that discs are more convenient for large centers. Additional study of this question is warranted as the Center gains additional experience.

What Kinds of Remote Facilities and Services Are Most Effective at the Local Level?

This question is considerably more complex than initial reference to it might indicate. A variety of services at remote locations were involved in the present study, but each had been designed with several aspects of the local situation in mind. For example, from the standpoint of the requestors alone, any system which is efficient and convenient will suffice. From the standpoint of monitoring requests and avoiding duplication as well as from the standpoint of tabulation, summarizing, and re-packaging services, more facilities are appropriate. It would appear that, for handling requests generated by users, some centralizing of requests prior to transmittal to the Center

is desirable. For the dissemination of current awareness materials and pre-packaged sets of information, intermediate handling of requests from the users to the Center should be kept at a minimum. Thus, in responding to this question, it is necessary to consider the nature of the request itself and the kind of information being disseminated.

What Training Programs are Most Effective for Encouraging Local Educators to Use the Services Provided by the Center?

As indicated in Chapter VII, the concept of an institute appears to be a very effective method for familiarizing users with the Center. A complete response to this question will require experimentation with several training methods; but at this stage of the Center's operation, concentrated personal experiences appear to be appropriate.

How Should a Center Such as the Educational Resources Center be Staffed and Organized?

Without formally defining the objectives and functions to be fulfilled by any given center, it is not possible to answer this question in a valid manner. Given the kinds of objectives associated with the Retrieval Center at Boulder, however, some suggestions can be made as follows: Components of the staff should include general management, technical personnel (programming specialists), input specialists, output specialists, and training and public relations personnel. In the present investigation, individuals concerned with production (output) indicated a need for constant communication with all other facets of the organization. Because of the role of these individuals, it appears that organizational structures of centers

should allow greater interaction between them and other center personnel. The production individuals appear to be the key factor in the success of the Center and their functions should dictate the Center organization.

In the present investigation, it was apparent that the procedure of having output specialists meet to share their suggestions for handling each request was a major contributor to the success of the Center. Since each output specialist brought to the consideration of a request a unique background of experience in education and a unique degree of familiarity with the data base, it follows logically that the group decision and subsequent plan for handling the request was greatly enhanced by such communication. This practice is considered by the evaluators as highly desirable and as having many implications for the staffing and organization of similar centers.

It would also appear that as a center becomes large, specialization by subject matter area of input and output specialists is appropriate. The field of education is so broad that one individual cannot adequately deal with all kinds of topics. The point at which specialization is necessary will, of course, depend upon the size of the center and the complexity of the population it serves.

Recommendations

Innumerable recommendations have been made throughout the body of this report. Most of them relate to specific activities of the Center rather than to the overall functioning of the Center as a totality. The following recommendations are more general than those contained in the body of the report and relate to the overall mission of the Center's operation in the future.

1. Research on Dissemination

There is a critical need in education at the present time for the validation of theoretical models of dissemination on which to base retrieval center activities. The gap between educational practice and research findings is extremely wide. It is the opinion of the present evaluators that this gap cannot be closed appreciably until appropriate models of dissemination are developed. The evaluators believe that every unit concerned with dissemination has an obligation to devote some of its activities to the development of appropriate dissemination models. It is therefore recommended that some attention in the Retrieval Center at Boulder be directed toward research designed to validate dissemination models. As the models are validated, change in the operational procedure of the Center will be dictated. In the absence of valid models, recommended changes are at best sketchy and incomplete. The Retrieval Center offers an excellent vehicle for research in the area of dissemination and this potential should be exploited fully.

2. Adequacy of the Data Base

At the present time, the data base of the Center consists of information obtained from a variety of sources. As might be expected, information from some sources is excellent and information from other sources is questionable. It is therefore recommended that the material coming into the Center be evaluated carefully for its validity and that questionable materials be excluded from the base. This type of input evaluation will require expertise in many subject matter areas as well as a procedure for making the evaluations, but such a step is considered highly desirable by the evaluators. Within the vicinity of the Center are many educational experts whose services for evaluating materials in the data base could be utilized. Such a program would contribute substantially toward the credibility of information provided by the Center and would, in the long run, contribute substantially to the Center's effectiveness and impact.

3, Completeness of the Data Base

In addition to continuous assessment of the validity of information in the data base, there is also a need to assure completeness of information in the base. In fact, the long range success of the Center is highly dependent on validity and completeness of data. It is recommended that the Current Index of Journals in Education be used extensively for the base along with descriptions of programs which are innovative in participating schools. Continued interaction with the ERIC data base is also recommended.

4. Turn-Around Time

With the introduction of the new products early in 1971, it was anticipated by the Center staff that turn-around time would be reduced appreciably. It is the opinion of the evaluators that the new products will permit much greater efficiency with which information, particularly on highly interesting topics, can be disseminated. In the case of extensive manual searches, it is recommended that the Center identify sources of specialization related to particular topics so that outside assistance can be obtained for manual searches. It should be noted that the impact of the new products was not assessed in the present evaluation.

5. Organization at the Local Level

As was indicated in the body of this report, the opportunity for a particular school system to develop procedures for relaying requests to the Center is a desirable feature. It is recommended that additional assistance be given schools in organizing a procedure appropriate for any given school based on experience of participating districts. It is suggested that four or five approaches be designed and presented to each prospective school so that some choice among procedures is allowed but that schools would not have to repeat mistakes made in other situations. In general, it would appear that the approaches developed in the BOCES schools during the year would accommodate most prospective participants.

6. Continuous Evaluation

The Center is to be commended for accumulating evaluation data as the Center developed. The form currently used, however, is not adequate for

all purposes and should be revised. It is recommended that the Center staff assemble various evaluation devices (ERIC, HFRL questionnaire, etc.) and develop a brief evaluation format which can be used directly with requestors. It is also recommended that a similar form be developed for occasional use with state coordinators. Since these forms can be made highly objective, quantification and plotting of trends is possible. Such a practice would yield an indication of reaction to the service at two levels over a period of time.

7. Awareness of the Center

Shortly after the need for greater information about the Center in the field was reported to the Center staff by the present evaluators, increased emphasis was placed on public relations. The evaluators obtained some evidence that this was a desirable move, and it is recommended that the present emphasis on public relations and awareness of the Center be continued. Audio tapes, video tapes, slide presentations and so forth all should be useful for extending awareness of the Center's services to proposed users. It is also suggested that members of the staff visit users frequently and that "open house" visitations to the Center by users be encouraged.

8. Descriptor Term Assignment

Throughout the evaluation, reference was frequently made by users and by Center staff to the need for refinement of the assignment of descriptor terms to a given project. Some progress in this area was made during the evaluation period, and it is recommended that continued attention be given

to this area. Modification of the ERIC descriptor catalog system along with the development of a unique taxonomy based on the Retrieval Center's experience is appropriate. Additionally, there is need for training of the coordinators in the assignment of specific requests to informational signals.

9. Library Referrals for Manual Searches

As was noted in Chapter III, reaction of the users to the services of the Center, response to the manual searches has been highly positive. Manual searches have been extremely time consuming, however, and therefore costly. It is recommended that a network of manual search sources be defined so that not all manual searches must be made by the Center staff. State departments and district information resources should be helpful in this regard. Thus, rather than eliminating manual searches, it is suggested that assistance with them be obtained.

10. Impact of the Center on Education

In the early stages of the evaluation, it was hoped that an accurate assessment could be made of the impact of the Center's services on educational practice. This was not possible, however, and it is recommended that further exploration of this area be continued with future evaluators. At best, specific observers could be placed in schools to identify changes associated with the Center's services. At least, follow-up study of uses made of Center information should be continued. Achievement of the assessment of impact requires considerable time, however, and the longitudinal aspect of such a study is imperative. Admitedly, the objectives of the Center include primary emphasis on dissemination only, but much could be contributed to

education in general if the impact of the Center's information could be demonstrated. In the absence of complete data, it appears that several stages or steps are necessary between a request for information and ultimate change in educational practice. Dissemination of information is only one link in the entire chain, but study of the "links" beyond dissemination is highly desirable. This recommendation is closely related to Recommendation 1.

11. Local Equipment

Because of the problems associated with microfiche, it is essential that microfiche readers be located a convenient places for users or that convenient and inexpensive systems be available for hard copy to be distributed. It is recommended that continued efforts be made to make hard copy more readily available to users.

12. Computer Equipment

It is recommended that continued study be given to the possibility of using discs for storage and retrieval rather than tapes. There appears to be efficiency in scaning and storing through the use of discs. In-depth analysis of the equipment situation will be required before conclusions can be reached.

13. New Products

It is unfortunate that the present evaluation did not provide concrete evidence related to the evaluation of the new products developed by the Center. Limited evidence suggests that these materials are highly effective,

however, and it is recommended that evaluation of them be undertaken immediately.

14. Expectation About Center Services

On occasion throughout the Evaluation period, some indication was encountered that users had a much higher expectation of the Center's services than was realistic. It is recommended that in all contacts with prospective users, coordinators by cautioned to establish realistic expectations about the Center's services so that disappointment will be avoided. Greater familiarity with the services and functioning of the Center will also contribute toward establishing realistic expectations.

15. BOCES Assistance

Two distinct audiences were served by the Center during 1970. One audience consisted of individuals indirectly related to the Center through participation in the Center's activities by their state, and the other audience consisted of individuals served directly by the Center through the BOCES districts. The diversity of these two audiences suggests that two levels of service be defined; one for those indirectly served and the other for those directly served. It is recommended that a closer coordination among Program Development, Program Evaluation and Information Retrieval within the BOCES schools be developed. For example, BOCES participants could be given the opportunity to request consultant services regarding a topic at the time that it is submitted as an information retrieval request. This would alert the consultants to potential programs and to interests developing in the schools. With this recommendation,

it should be possible to assess the stages through which an innovative idea must pass before it is implemented, and a major contribution to educational theory could be made. This recommendation is closely related to Recommendation #1 regarding research on dissemination. Seldom is such an opportunity to study a phenomenon as readily available as exists in the relationship between the BOCES and the Retrieval Center, and it is strongly recommended that this potential be exploited.

16. Information About Local School Programs in the BOCES Districts

It was frequently noted that practitioners had a desire to learn more about innovative programs being implemented in other schools in their area. It is recommended that a local system of in-depth information about innovative programs be placed in the data base and that this information be dissemination to participants. Once the information is disseminated, it can be followed up by various visits and training institutes. The use of the computer for handling such a phenomenon has yet to be demonstrated and such a demonstration could in turn be generalizable to other situations.

Summary

In summary, the Retrieval Center in Boulder is considered to be an effective unit by the evaluators. Response to the service is favorable and some evidence exists that the Center is having an impact on educational practice. Recommendations for change in the Center's operation relate primarily to refinement and extension of present activities.

Appendix A

Proposal for Evaluation of the Retrieval Center

EVALUATION OF THE COOPERATIVE RESOURCES CENTER

Boulder, Colorado

The primary objectives of the Cooperative Community Educational Resources Center, Boulder, Colorado, are to 1) reduce the delay between current educational research and classroom practice, and 2) increase professional growth through individual research assistance. These primary objectives are accomplished through several specific strategies as follows:

1. A "current awareness service" wherein monthly abstracts of new information and resources relating to professional needs of users are sent to educators having filed an interest profile of typical areas of concern to them;

2. A computer-based retrieval system for providing educational information on request classified according to ERIC abstractors, and local description; and

3. Manual search services to identify educational information, such searches being made by reference librarians upon request of educators.

Educators using the resources center directly are located in eight districts in eastern Colorado. Educators using the resources center through extension terminals are located in South Dakota, Utah, Wyoming, and the Northwest Regional Educational Laboratory at Portland, Oregon. Because of the complexity of the Center, a comprehensive evaluation of the project will require an examination of several dimensions as follows:

a) Characteristics of users

(1) geographic location in relation to the Center

(2) position within their school

(a) field
(b) level
(c) experience
(d) education
(e) previous experience with research
(f) demographic characteristics (age, sex, tenure, etc.)

b) Content of information requested

(1) topical content of material

(2) source of information (periodical, book, etc.)

(3) use to be made of information

c) Ultimate impact on educational practice

(1) change in behavior or functioning of user (morale, knowledge, attitudes, etc.)

(2) change in practices of users (techniques and methods)

(3) Change in content of educational experiences (what is taught)

(4) change in behavior of pupils of users

d) Efficiency of dissemination process

(1) time required for turn around

(2) stages or delays in obtaining information

(3) cost of providing information

(4) relationships with data sources other than Center

(5) internal organization and functioning of Center

(a) advisory board
(b) administrative personnel
(c) professional personnel

(6) Antecedents

(a) publicity
(b) needs

e) Quality of information provided

(1) adequacy, currency, and completeness of data bank

(2) readability and format of information supplied

(3) validity of data supplied for intended purpose

(4) absence of problems in obtaining information

(5) professional service of Center personnel

f) Physical setting and hardware

(1) kinds of main frame hardware best suited for Center

(2) peripheral equipment best suited for Center

(3) hook-ups for most efficient results

(4) load on computer at scheduled times

g) Software and storage

(1) suitability of descriptors and information retrieval

(2) sequence of coding and storage of information

(3) sources of information

(a) ERIC
(b) local information

h) Training program for users

(1) type of training

(2) location

(3) length

(4) content

(5) training staff

The evaluation effort will be designed to permit both process evaluation and product evaluation. In general, the central purpose of the evaluation effort will be to provide complete or partial answers to the following questions through the collection of appropriate evidence:

1. Who uses the Center most frequently?

2. What uses do educators make of the information services provided by the Center?

3. What questions coming to the Center are most prevalent?

4. What kinds of materials are needed at the local level? (Government reports? Audio-visual materials? Abstracts?)

5. What impact does the Center have on local educational practice? (The research will be conducted only within the Northern Colorado Experimental and Developmental Center.)

6. What factors contribute toward the motivation of educators to use the Center?

7. Geographically speaking, how much area can one service center cover?

8. What kinds of materials are needed at the local level?

9. How should informational materials requested at the local level be stored in terms of magnetic tapes, discs, etc.?

10. What kinds of remote facilities and services are most effective at the local level?

11. What training programs are most effective for encouraging local educators to use the services provided by the Center?

12. How should a Center such as the Educational Resources Center be staffed and organized?

To obtain data for answering the foregoing questions, detailed records will be maintained about the search requests made of the Center. So that personal characteristics data will not be duplicated unnecessarily, each user will be requested to complete a personal characteristics questionnaire only once. All subsequent requests made by this individual will then be coded to his personal characteristics data.

Content of questions (all questions will be cleared through USOE) and type of material needed for application at the local level will be assessed through a brief use questionnaire which will be based on interviews with a sample of users. Purpose of the interview will be to define categories of use and type of materials needed so that an objective checklist can be developed for use with all requests. Development of such a checklist will make data collection highly efficient and will provide a continuous flow of information about requests and materials which can be monitored by the Center administration.

Impact of the Center on educational practice will be assessed in two ways. First, a sample of educators using the Center's services will be interviewed to determine changes in educational practice initiated by them in relation to the service requested. Second, schools served by the Center geographically will be surveyed for new program activities and these will be scrutinized for possible relation to the services provided by the Center.

Depth interview will be conducted with a sample of users to determine their motivation for using the Center's services. These interview responses will provide insight into the kinds of service desired at the local level and the kind of training preferred by local educators.

Geographic area coverage will be studied by determining the distance of requests from the Center itself and from terminals throughout the area. Saturation of requests within concentric circles away from the Center will be used to describe the nature of the relationship between distance and frequency and type of requests. Comparisons between districts with and without terminals but equidistant from the main Center will yield suggestions for future organization of remote units.

Process evaluation will involve detailed study of the organization and efficiency of the functioning of the Center in relation to administrative practice. For example, turnaround time for handling requests before and after specific changes in organization will suggest the relative efficiency of new administrative practices or modified organizational structure.

Appendix B

Coding Key

for Requests Made to Retrieval Center

Coding Key
Requests made to NCBOCES Information Retrieval Center

Columns	Data Code
1-4	Request Number 0001 through 29--
5-6	State or District 01 - Boulder Valley Public Schools, RE-2J 02 - Westminster Adams 50 03 - Thornton-Northglenn, Eastlake, Adams 12 04 - Loveland (Big Thompson) Larimer R-2J 05 - Ft. Collins, Poudre Larimer R-1 06 - Longmont, St. Vrain Valley, Boulder RE-1J 07 - Estes Park, Larimer R-3 08 - Colorado not in NCBOCES 09 - Nevada 10 - South Dakota 11 - Washington 12 - Oregon 13 - Utah 14 - Wyoming 15 - All other States
7-8	Occupation or Title 01 - Student 02 - Teacher, Elementary (K-6) 03 - Teacher, Secondary, Jr. High and High School 04 - Teacher, College or University 05 - Librarian 06 - Specialists, Coordinators, Directors, Consultants 07 - Pupil Personnel - Counselor, Psychologist 08 - Administrator - Principal 09 - Administrator - Superintendent 10 - Layman 11 - Other 12 - Teacher, Special Education
9-10	Institution 01 - Elementary School 02 - High School, Jr. Hi. 03 - College or Univ. 04 - State Dept of Educ 05 - Research Organization 06 - District Admin Unit 07 - Teacher Training Institution 08 - ERIC & Other Resource Ctrs 09 - Other 10 - Special Education Institution

Columns	Data Code
11-12	Blank
13-14	Date of Request 01 - Prior to 1968 02 - January to June 1968 03 - July to December 1968 04 - January to June 1969 05 - July to December 1969 06 - January to June 1970 07 - July to December 1970
15-17	Computer Processing Time in Days
18-20	Manual Processing Time in Days
21	Type of Profile sent 1 - CI only 2 - H only 3 - M only 4 - CI and H 5 - CI and M 6 - H and M 7 - CI, H and M (all three)
22	Question #1 on Evaluation Form (No. of Computer abstracts useful) 1 - 100% (all) 2 - 75% (most) 3 - 50% (some) 4 - 25% (few) 5 - 0% (none)
23	Question #2 on Evaluation Form (No. of Manual search materials useful) same as above for column 22
24	Question #3 on Evaluation Form (Would you pay for service?) 1 - yes 2 - no

Columns	Data Code
25	Additional Comments on Evaluation Form 1 - Generally positive 2 - Positive with reservations 3 - Negative 4 - Neutral
26-27	HFRL Subject of Request 01 - Curriculum Development 02 - Pupil Characteristics, behavior and guidance 03 - Instructional Procedure and Techniques 04 - Administrative Procedure and Organization 05 - Teacher education, pre and in-service 06 - Subject matter topic 07 - Special Education 08 - Instructional Resources, Research 09 - Other
28-29	ERIC Subject of Request 01 - Adult Education 02 - Counseling & Student Personnel Services 03 - Disadvantaged 04 - Early Childhood Education 05 - Educational Administration 06 - Educational Media and Technology 07 - Exceptional Children 08 - Higher Education 09 - Junior Colleges 10 - Library and Information Services 11 - Linguistics 12 - Reading 13 - Rural Education & Small Schools 14 - Science and Mathematics Education 15 - Teacher Education 16 - Teaching of English 17.- Teaching Foreign Languages 18 - Tests, Measurements and Evaluation 19 - Vocational and Technical Education 20 - Social Science Education 21 - Music, Art and Humanities Education

Appendix C

Cross Classification Tables

for Requests Made to the Retrieval Center

1967 - 1970

Tables 24-30 - Cross Classification by Colorado School Districts

Tables 31-38 - Cross Classification by Six Participating States Outside Colorado

Tables 39-46 - Cross Classification by Date of Request

Tables 47-51 - Cross Classification by ERIC Subject Code: Reading

Tables 52-56 - Cross Classification by ERIC Subject Code: Educational Administration

Tables 57-61 - Cross Classification by HFRL Subject Code: Curriculum Development

Tables 62-66 - Cross Classification by HFRL Subject Code: Instructional Procedure and Techniques

Tables 67-71 - Cross Classification by HFRL Subject Code: Administrative Procedure and Organization

Table 24

Number of Requests by Occupation or Title

in Colorado School Districts

Occupation or Title	Boulder Valley Public Schools		Westminster, Adams 50		Thornton-Northglenn, Adams 12		Loveland, Larimer R-2J		Ft Collins, Larimer R-1		Longmont, Boulder RE-1J		Estes Park, Larimer R-3		Other Colorado Districts	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Student	15	1.7	0		0		0		2	3.2	0		0		81	20.4
Teacher, Elementary (K-6)	93	10.3	0		7	7.2	3	20.0	0		7	17.0	2	12.5	11	2.8
Teacher, Secondary (7-12)	152	16.9	1	5.3	20	20.6	5	33.3	5	7.9	4	9.8	6	37.4	7	1.8
Teacher, College or Univ.	12	1.3	0		0		0		1	1.6	0		0		17	4.3
Librarian	188	20.9	1	5.3	10	10.3	0		0		0		0		20	5.0
Specialist, Coordinator, Director or Consultant	278	30.8	17	89.4	29	30.0	5	33.3	12	19.0	4	9.8	4	25.0	188	47.3
Pupil Personnel	36	4.0	0		1	1.0	0		1	1.6	4	9.8	0		29	7.3
Administrator, Principal	76	8.4	0		9	9.3	1	6.7	0		22	53.6	3	18.8	15	3.8
Administrator, Superintendent	13	1.4	0		21	21.6	1	6.7	42	66.7	0		1	6.3	4	1.0
Layman	18	2.0	0		0		0		0		0		0		1	.3
Other	15	1.7	0		0		0		0		0		0		22	5.5
Teacher, Special Ed.	5	.6	0		0		0		0		0		0		2	.5
Totals	901	100.0	19	100.0	97	100.0	15	100.0	63	100.0	41	100.0	16	100.0	397	100.0

Table 25

Number of Requests by Institution

in Colorado School Districts

Institution	Boulder Valley Public Schools		Westminster, Adams 50		Thornton-Northglenn, Adams 12		Loveland, Larimer R-2J		Ft Collins, Larimer R-1		Longmont, Boulder RE-1J		Estes Park, Larimer R-3		Other Colorado Districts	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Elementary School	253	25.1	0		23	23.5	4	26.7	0		20	40.0	6	37.5	28	6.5
High School, Jr. High	384	38.1	2	10.5	27	27.6	4	26.7	5	7.9	19	38.0	9	56.2	43	10.0
College or Univ.	48	4.8	0		0		0		4	6.3	0		0		111	26.0
State Dept of Educ	0		0		0		0		0		0		0		81	18.9
Research Organization	8	.8	0		0		0		0		0		0		23	5.4
District Admin Unit	214	21.2	14	73.7	48	48.9	7	46.6	54	85.8	11	22.0	1	6.3	88	20.5
Teacher Trng Inst.	0		0		0		0		0		0		0		3	.7
ERIC, Other Res. Ctrs.	88	8.7	3	15.8	0		0		0		0		0		11	2.5
Other	13	1.3	0		0		0		0		0		0		32	7.4
Special Ed. Inst.	1	.1	0		0		0		0		0		0		9	2.1
Totals	1009	100.0	19	100.0	98	100.0	15	100.0	63	100.0	50	100.0	16	100.0	429	100.0

Table 26

Number of Requests by Date of Request

in Colorado School Districts

Date of Request	Boulder Valley Publid Schools		Westminster, Adams 50		Thornton-Northglenn, Adams 12		Loveland, Larimer R-2J		Ft Collins, Larimer R-1		Longmont, Boulder RE-1J		Estes Park, Larimer R-3		Other Colorado Districts	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Prior to 1968	1	.1	0		0		0		0		0		0		0	
January to June 1968	41	4.1	0		0		0		1	1.6	3	6.1	0		18	4.0
July to December 1968	41	4.1	0		0		0		0		2	4.1	0		14	3.1
January to June 1969	161	16.3	0		2	2.1	0		0		2	4.1	1	6.6	42	9.4
July to December 1969	254	25.7	0		4	4.2	2	12.5	3	4.9	0		0		66	14.8
January to June 1970	202	20.4	8	42.1	13	13.5	1	6.3	5	8.2	16	32.6	1	6.6	104	23.3
July to December 1970	289	29.3	11	57.9	77	80.2	13	81.2	52	85.3	26	53.1	13	86.8	202	45.4
Totals	989	100.0	19	100.0	96	100.0	16	100.0	61	100.0	49	100.0	15	100.0	446	100.0

Table 27

Number of Requests by Type of Profile Sent

in Colorado School Districts

Type of Profile Sent	Boulder Valley Public Schools f	Boulder Valley Public Schools %	Westminster, Adams 50 f	Westminster, Adams 50 %	Thornton, Northglenn, Adams 12 f	Thornton, Northglenn, Adams 12 %	Loveland, Larimer R-2J f	Loveland, Larimer R-2J %	Ft Collins, Larimer R-1 f	Ft Collins, Larimer R-1 %	Longmont, Boulder RE-1J f	Longmont, Boulder RE-1J %	Estes Park, Larimer R-3 f	Estes Park, Larimer R-3 %	Other Colorado Districts f	Other Colorado Districts %
Current Interest only	257	30.1	5	26.3	28	29.5	4	25.0	29	46.8	17	35.5	4	26.7	136	32.8
History only	13	1.5	0		2	2.1	1	6.2	0		0		0		6	1.4
Manual only	235	27.5	0		13	13.6	1	6.2	3	4.8	3	6.2	1	6.6	36	8.7
Current Interest & History	71	8.3	1	5.3	11	11.6	2	12.5	8	12.9	5	10.4	2	13.3	69	16.6
Current Interest & Manual	218	25.6	9	47.3	29	30.6	6	37.6	10	16.1	14	29.2	4	26.7	126	30.3
History and Manual	3	.4	1	5.3	0		0		0		0		0		1	.2
Current Interest, History, and Manual (all three)	56	6.6	3	15.8	12	12.6	2	12.5	12	19.4	9	18.7	4	26.7	42	10.0
Totals	853	100.0	19	100.0	95	100.0	16	100.0	62	100.0	48	100.0	15	100.0	416	100.0

Table 28

Mean Processing Time

in Colorado School Districts

District	Mean Computer Processing Time (days)	Standard Deviation	N	Mean Manual Processing Time (days)	Standard Deviation	N
Boulder Valley Public Schools	16.734	12.027	527	17.897	16.267	530
Westminster, Adams 50	13.611	8.056	18	23.000	16.511	13
Thornton-Northglenn, Adams 12	18.580	10.679	81	17.600	11.883	50
Loveland, Larimer R-2J	19.067	8.306	15	20.000	9.226	9
Ft Collins, Larimer R-1	20.089	10.413	56	20.167	9.560	24
Longmont, Boulder RE-1J	17.810	11.308	42	17.760	8.140	25
Estes Park, Larimer R-3	15.462	10.203	13	18.000	10.932	8
Other Colorado Districts	17.226	10.751	345	20.600	15.992	185

Table 29

Number of Requests by HFRL Subject

in Colorado School Districts

HFRL Subject	Boulder Valley Public Schools f	Boulder Valley Public Schools %	Westminster, Adams 50 f	Westminster, Adams 50 %	Thornton-Northglenn, Adams 12 f	Thornton-Northglenn, Adams 12 %	Loveland, Larimer R-2J f	Loveland, Larimer R-2J %	Ft Collins, Larimer R-1 f	Ft Collins, Larimer R-1 %	Longmont, Boulder RE-1J f	Longmont, Boulder RE-1J %	Estes Park, Larimer R-3 f	Estes Park, Larimer R-3 %	Other Colorado Districts f	Other Colorado Districts %
Curriculum Development	147	14.5	1	5.3	13	13.4	1	6.2	16	25.4	11	21.6	5	31.2	42	9.2
Pupil Characteristics, Behavior & Guidance	79	7.8	1	5.3	13	13.4	2	12.5	6	9.5	2	3.9	1	6.3	76	16.7
Instructional Procedure and Techniques	217	21.4	7	36.8	11	11.3	2	12.5	18	28.6	7	13.7	2	12.5	79	17.3
Administrative Procedure and Organization	249	24.6	7	36.8	29	30.0	5	31.3	14	22.2	22	43.1	4	25.0	40	30.9
Teacher Education, Pre and In-Service	25	2.5	0		4	4.1	3	18.8	2	3.2	1	2.0	0		27	5.9
Subject Matter Topic	126	12.4	0		16	16.4	2	12.5	1	1.6	3	5.9	2	12.5	39	8.6
Special Education	32	3.2	1	5.3	2	2.1	1	6.2	1	1.6	3	5.9	2	12.5	32	7.0
Instructional Resources, Research	138	13.6	2	10.5	9	9.3	0		5	7.9	2	3.9	0		20	4.4
Totals	1013	100.0	19	100.0	97	100.0	16	100.0	63	100.0	51	100.0	16	100.0	455	100.0

ERIC Subject	Boulder Valley f	Boulder Valley %	Westminster f	Westminster %	Thornton-Northglenn f	Thornton-Northglenn %	Loveland f	Loveland %	Ft Collins f	Ft Collins %	Longmont f	Longmont %	Estes Park f	Estes Park %	Other Colorado f	Other Colorado %
Adult Education	1	.1	0		0		0		0		0		0		2	.4
Counseling & Student Personnel Services	47	4.6	1	5.3	11	11.3	1	6.2	5	7.9	2	3.9	1	6.3	54	11.8
Disadvantaged	20	2.0	0		1	1.0	1	6.2	3	4.8	0		0		7	1.5
Early Childhood Education	7	.7	0		2	2.1	0		1	1.6	0		1	6.3	10	2.2
Educational Administration	310	30.6	10	52.6	34	35.0	6	37.6	20	31.6	25	48.9	4	25.0	161	35.4
Educational Media and Technology	36	3.6	0		6	6.2	0		2	3.2	1	2.0	0		14	3.1
Exceptional Children	36	3.6	1	5.3	2	2.1	0		2	3.2	2	3.9	2	12.4	36	7.9
Higher Education	2	.2	0		0		0		0		0		0		6	1.3
Junior Colleges	2	.2	0		0		0		0		0		0		0	
Library and Info Services	143	14.1	2	10.5	11	11.3	2	12.5	3	4.8	2	3.9	2	12.4	20	4.4
Linguistics	5	.5	0		0		1	6.2	0		0		0		1	.2
Reading	52	5.1	0		1	1.0	2	12.5	5	7.9	2	3.9	0		20	4.4
Rural Ed. & Small Schools	0		0		0		0		0		1	2.0	0		0	
Science & Math Educ.	67	6.6	0		7	7.2	0		8	12.7	3	5.9	3	18.7	19	4.2
Teacher Education	24	2.4	0		3	3.1	3	18.8	2	3.2	1	2.0	0		28	6.1
Teaching of English	38	3.8	2	10.5	0		0		3	4.8	3	5.9	0		6	1.3
Teaching of Foreign Lang.	8	.8	0		1	1.0	0		0		0		1	6.3	0	
Tests, Measurements, and Evaluation	26	2.6	2	10.5	5	5.2	0		1	1.6	1	2.0	0		37	8.1
Vocational and Technical Education	41	4.0	0		5	5.2	0		5	7.9	2	3.9	0		17	3.7
Social Science Education	125	12.3	1	5.3	6	6.2	0		3	4.8	5	9.8	1	6.3	14	3.1
Music, Art and Humanities Education	22	2.2	0		2	2.1	0		0		1	2.0	1	6.3	4	.9
Totals	1013	100.0	19	100.0	97	100.0	16	100.0	63	100.0	51	100.0	16	100.0	456	100.0

Table 31

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Occupation or Title in 6 States

Occupation or Title	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
1. Student	9	0	3	0	2	0
2. Teacher, Elementary (K-6)	0	2	30	11	2	24
3. Teacher, Secondary (7-12)	2	0	52	17	3	37
4. Teacher, College or University	0	4	10	35	4	1
5. Librarian	0	0	2	25	13	2
6. Specialist, Coordinator, Director or Consultant	33	26	95	192	18	75
7. Pupil Personnel - Counselor, Psychologist	0	2	3	13	1	5
8. Administrator - Principal	1	7	30	13	6	49
9. Administrator - Superintendent	1	8	42	25	3	16
10. Layman	1	0	0	0	0	0
11. Other	0	1	5	2	0	6
12. Teacher, Special Education	0	0	3	6	4	7
Totals	47	50	275	339	56	222

Table 32

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Institution in 6 States

Institution	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
1. Elementary School	1	1	43	24	3	57
2. High School, Junior High	3	3	62	36	10	66
3. College or University	11	6	29	38	6	14
4. State Department of Education	22	5	9	72	2	35
5. Research Organization	0	0	0	18	11	1
6. District Administrative Unit	12	29	114	132	14	33
7. Teacher Training Institution	0	0	0	2	0	0
8. Eric & Other Resource Centers	0	0	36	13	7	5
9. Other	0	0	3	10	2	10
10. Special Education Institution	0	0	0	4	1	1
Totals	49	44	296	349	56	222

Table 33

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by Date of Request in 6 States

Date of Request	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
Prior to 1968	0	0	0	0	0	0
January to June 1968	0	0	0	0	0	0
July to December 1968	0	0	0	0	0	0
January to June 1969	0	1	6	1	0	0
July to December 1969	7	6	89	1	3	0
January to June 1970	11	11	100	7	1	3
July to December 1970	33	32	112	342	58	219
Totals	51	50	307	352	62	222

Number of Requests by Type of Profile Sent in 6 States

Type of Profile Sent						
Current Interest only	22	11	93	180	40	128
History only	0	2	3	8	1	8
Manual only	2	3	28	16	4	5
Current Interest & History	10	12	24	98	11	61
Current Interest & Manual	15	17	127	21	4	13
History and Manual	0	0	2	1	0	1
Current Interest, History and Manual (all three)	2	4	23	20	1	7
Totals	51	49	300	344	61	223

Table 34

Evaluation of the Information Retrieval Center, Boulder, Colorado

Mean Processing Time in 6 States

State	Mean Computer Processing Time (days)	Standard Deviation	N	Mean Manual Processing Time (days)	Standard Deviation	N
Wyoming	20.20	11.475	49	26.21	18.501	19
Nevada	19.30	10.988	46	25.75	21.651	24
South Dakota	18.34	14.301	264	26.98	20.721	169
Washington	20.80	9.536	328	20.64	13.434	58
Oregon	18.40	8.940	58	15.75	11.519	8
Utah	21.01	10.820	218	19.65	15.507	26

Table 35

Evaluation of the Information Retrieval Center, Boulder, Colorado

Responses to Evaluation Questionnaire in 6 States

Question 1: Were the abstracts in this profile pertinent to your request?

Response	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
100%	4	1	0	9	1	4
75%	4	1	12	26	5	13
50%	0	0	1	7	1	8
25%	0	0	3	18	5	10
0%	0	0	0	2	2	5
Totals	8	2	16	62	14	40

Question 2: Were the Manual search materials (zeroxed articles, bibliography, pamphlets or books) in the profile pertinent?

100%	1	4	7	6	2
75%	2	7	3	0	5
50%	0	0	1	0	1
25%	0	1	1	0	4
0%	0	0	6	1	0
Totals	3	12	18	7	12

Table 36

Evaluation of the Information Retrieval Center, Boulder, Colorado

Responses to Evaluation Questionnaire in 6 States

Question 3: Would you be willing to pay for educational information retrieval services on a Cost-Per-Profile basis?

Response	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
Yes	6	3	11	51	15	28
No	0	0	4	6	0	6

Additional Comments on Evaluation Form

Category of Response					
Generally Positive	4	8	15	2	7
Positive with Reservations	0	2	5	2	2
Negative	0	0	10	1	6
Neutral	0	1	6	1	4
Totals	4	11	36	6	19

Table 37

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by HFRL Subject in 6 States

HFRL Subject	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
Curriculum Development	9	1	28	39	6	50
Pupil Characteristics, Behavior and Guidance	8	14	40	35	12	22
Instructional Procedure and Techniques	5	12	65	84	15	56
Administrative Procedure and Organization	22	13	109	117	17	38
Teacher Education, Pre and In-Service	0	1	14	15	0	4
Subject Matter Topic	1	2	30	17	2	14
Special Education	0	3	11	21	3	16
Instructional Resources, Research	6	4	14	23	7	25
Totals	51	50	311	351	62	225

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by ERIC Subject in 6 States

ERIC Subject	Wyoming	Nevada	South Dakota	Washington	Oregon	Utah
Adult Education	0	0	2	1	0	0
Counseling and Student Personnel Services	8	10	31	30	8	19
Disadvantaged	1	1	2	5	1	5
Early Childhood Education	0	2	5	7	3	5
Educational Administration	23	15	120	135	14	46
Educational Media and Technology	2	2	11	12	5	5
Exceptional Children	0	1	10	13	0	12
Higher Education	0	0	4	2	1	0
Junior Colleges	0	0	2	0	5	0
Library and Information Services	3	4	13	20	6	14
Linguistics	0	0	0	2	0	1
Reading	1	1	12	20	3	17
Rural Education and Small Schools	0	2	0	5	2	1
Science and Mathematics Education	2	5	31	22	1	22
Teacher Education	0	1	13	16	0	4
Teaching of English	3	0	7	9	2	18
Teaching Foreign Languages	1	1	2	9	1	2
Tests, Measurements and Evaluation	6	1	8	5	2	4
Vocation and Technical Education	1	3	19	18	3	23
Social Science Education	0	0	14	14	3	21
Music, Art and Humanities Education	0	1	5	6	2	6
Total	51	50	311	351	62	225

Table 39

Number of Requests by State or District

Sorted by Date of Request

State or District	Jan to Jun 1968	Jul to Dec 1968	Jan to Jun 1969	Jul to Dec 1969	Jan to Jun 1970	Jul to Dec 1970
Boulder Valley Public Schools	41(65.0%)	41(71.9%)	161(74.0%)	254(55.6%)	202(40.6%)	289(18.6%)
Westminster, Adams 50	0	0	0	0	8(1.6%)	11 (.7%)
Thornton-Northglenn, Adams 12	0	0	2(.9%)	4(.9%)	13(2.6%)	77(4.9%)
Loveland, Larimer R-2J	0	0	0	2(.4%)	1(.2%)	13(.8%)
Ft. Collins, Larimer R-1	1(1.6%)	0	0	3(.7%)	5(1.0%)	52(3.3%)
Longmont, Boulder RE-1J	3(4.8%)	2(3.5%)	2(.9%)	0	16(3.2%)	26(1.7%)
Estes Park, Larimer R-3	0	0	1(.5%)	0	1(.2%)	13(.8%)
Colorado not in NCBOCES	18(28.6%)	14(24.6%)	42(19.4%)	66(14.5%)	104(20.5%)	202(13.0%)
Nevada	0	0	1(.5%)	6(1.3%)	11(2.2%)	32(2.1%)
South Dakota	0	0	6(2.8%)	89(19.5%)	100(20.1%)	112(7.2%)
Washington	0	0	1(.5%)	1(.3%)	7(1.4%)	342(22.0%)
Oregon	0	0	0	3(.7%)	1(.2%)	58(3.7%)
Utah	0	0	0	0	3(.6%)	219(14.1%)
Wyoming	0	0	0	7(1.5%)	11(2.2%)	33(2.1%)
All other States	0	0	1(.5%)	21(4.6%)	17(3.4%)	78(5.0%)
Totals	63(100.0%)	57(100.0%)	217(100.0%)	456(100.0%)	500(100.0%)	1557(100.0%)

Table 40

Number of Requests by Occupation or Title

Sorted by Date of Request

Occupation or Title	Jan to Jun 1968		Jul to Dec 1968		Jan to Jun 1969		Jul to Dec 1969		Jan to Jun 1970		Jul to Dec 1970	
	f	%	f	%	f	%	f	%	f	%	f	%
Student	0		0		2	1.4	11	2.8	26	5.6	74	5.0
Teacher, Elementary (K-6)	12	22.6	5	10.2	11	7.5	16	4.0	65	13.9	86	5.8
Teacher, Secondary (7-12)	11	20.8	8	16.3	13	8.8	79	19.9	30	6.4	170	11.5
Teacher, College or University	3	5.7	3	6.1	1	.7	0		9	1.9	81	5.5
Librarian	5	9.4	7	14.3	49	33.2	64	16.2	35	7.5	98	6.6
Specialist, Coordinator, Director or Consultant	14	26.4	17	34.9	43	29.3	151	38.1	163	34.7	622	42.0
Pupil Personnel, Counselor, Psychologist, or Nurse	1	1.9	1	2.0	4	2.7	17	4.3	17	3.6	53	3.6
Administrator, Principa.	6	11.3	3	6.1	16	10.9	25	6.3	57	12.2	122	8.3
Administrator, Superintendent	0		3	6.1	1	.7	22	5.6	41	8.8	125	8.5
Layman	1	1.9	1	2.0	5	3.4	3	.8	4	.9	5	.3
Other	0		1	2.0	2	1.4	4	1.0	17	3.6	23	1.6
Teacher, Special Education	0		0		0		4	1.0	4	.9	19	1.3
Totals	53	100.0	49	100.0	147	100.0	396	100.0	468	100.0	1478	100.0

Table 41

Number of Requests by Institution

Sorted by Date of Request

Institution	Jan to Jun 1968		Jul to Dec 1968		Jan to Jun 1969		Jul to Dec 1969		Jan to Jun 1970		Jul to Dec 1970	
	f	%	f	%	f	%	f	%	f	%	f	%
Elementary School	22	32.8	11	19.3	54	25.5	52	11.9	115	23.4	197	13.0
High School, Junior High	25	37.3	15	26.2	88	41.5	177	40.3	81	16.5	280	18.5
College or University	3	4.5	11	19.3	9	4.2	16	3.6	46	9.3	206	13.6
State Department of Education	1	1.5	1	1.8	12	5.7	8	1.8	25	5.1	181	11.9
Research Organization	4	6.0	1	1.8	7	3.3	11	2.5	11	2.2	46	3.0
District Administrative Unit	9	13.4	13	22.8	27	12.7	132	30.0	160	32.6	435	28.7
Teacher Training Institution	0		0		0		1	.2	0		5	.3
ERIC and Other Resource Centers	0		0		8	3.8	29	6.6	40	8.1	114	7.5
Other	3	4.5	5	8.8	7	3.3	13	2.9	8	1.6	44	2.9
Special Education Institution	0		0		0		1	.2	6	1.2	9	.6
Totals	67	100.0	57	100.0	212	100.0	441	100.0	492	100.0	1517	100.0

Table 42

Number of Requests by HFRL Subject

Sorted by Date of Request

HFRL Subject	Jan to Jun 1968		Jul to Dec 1968		Jan to Jun 1969		Jul to Dec 1969		Jan to Jun 1970		Jul to Dec 1970	
	f	%	f	%	f	%	f	%	f	%	f	%
Curriculum Development	15	17.4	14	18.2	23	10.1	49	10.7	61	12.2	228	14.7
Pupil Characteristics, Behavior and Guidance	9	10.5	7	9.1	16	7.0	57	12.4	50	10.0	194	12.5
Instructional Procedure and Techniques	33	38.4	21	27.2	47	20.7	78	17.1	93	18.7	334	21.5
Administrative Procedure and Organization	16	18.6	16	20.8	59	26.1	142	31.2	175	35.3	411	26.4
Teacher Education, Pre and In-Service	0		1	1.3	11	4.8	18	3.9	15	3.0	57	3.7
Subject Matter Topic	2	2.3	8	10.4	36	15.9	47	10.3	45	9.0	126	8.1
Special Education	10	11.6	3	3.9	3	1.3	11	2.4	27	5.4	78	5.0
Instructional Resources, Research	1	1.2	7	9.1	32	14.1	55	12.0	32	6.4	126	8.1
Totals	86	100.0	77	100.0	227	100.0	458	100.0	498	100.0	1554	100.0

Table 43

Number of Requests by ERIC Subject

Sorted by Date of Request

ERIC Subject	Jan to Jun 1968		Jul to Dec 1968		Jan to Jun 1969		Jul to Dec 1969		Jan to Jun 1970		Jul to Dec 1970	
	f	%	f	%	f	%	f	%	f	%	f	%
Adult Education	0		1	1.3	0		2	.4	1	.2	3	.2
Counseling and Student Personnel Services	4	4.7	3	3.9	9	4.0	39	8.5	33	6.6	150	9.7
Disadvantaged	2	2.3	4	5.2	3	1.3	4	.9	8	1.6	27	1.7
Early Childhood Education	2	2.3	2	2.6	3	1.3	4	.9	8	1.6	28	1.8
Educational Administration	32	37.2	22	28.5	69	30.5	162	35.4	203	40.9	475	30.6
Educational Media and Technology	2	2.3	2	2.6	11	4.8	11	2.4	21	4.2	57	3.7
Exceptional Children	11	12.8	3	3.9	3	1.3	14	3.1	25	5.0	64	4.1
Higher Education	0		0		2	.9	0		5	1.0	14	.9
Junior Colleges	0		0		0		2	.4	1	.2	6	.4
Library and Information Services	0		4	5.2	29	12.8	61	13.3	46	9.5	108	6.9

(Continued on next page)

Table 43
Number of Requests by ERIC Subject (Continued)

ERIC Subject	Jan to Jun 1968		Jul to Dec 1968		Jan to Jun 1969		Jul to Dec 1969		Jan to Jun 1970		Jul to Dec 1970	
	f	%	f	%	f	%	f	%	f	%	f	%
Linguistics	1	1.2	0		0		0		3	.6	8	.5
Reading	2	2.3	2	2.6	15	6.6	19	4.1	27	5.4	79	5.1
Rural Education and Small Schools	0		0		0		1	1.2	0		9	.6
Science and Mathematics Education	9	10.5	9	11.7	11	4.8	33	7.2	28	5.6	108	6.9
Teacher Education	0		2	2.6	12	5.3	14	3.1	12	2.4	62	4.0
Teaching of English	2	2.3	2	2.6	8	3.5	9	2.0	15	3.0	54	3.5
Teaching Foreign Languages	1	1.2	1	1.3	1	.4	2	.4	0		21	1.4
Tests, Measurements and Evaluation	2	2.3	4	5.2	6	2.6	14	3.1	21	4.2	56	3.6
Vocational and Technical Education	1	1.2	1	1.3	6	2.6	24	5.2	8	1.6	99	6.4
Social Science Education	13	15.1	8	10.4	30	13.3	41	9.0	28	5.6	98	6.3
Music, Art and Humanities Education	2	2.3	7	9.1	9	4.0	2	.4	4	.8	28	1.8
Totals	86	100.0	77	100.0	227	100.0	458	100.0	497	100.0	1554	100.1

Table 44

Number of Requests by Type of Profile Sent
Sorted by Date of Request

Type of Profile Sent	1968 Jan to June	1968 July to Dec	1969 Jan to June	1969 July to Dec	1970 Jan to June	1970 July to Dec
Current Interest only	32	30	45	75	88	714
History only	4	0	0	6	0	36
Manual only	5	5	68	113	56	107
Current Interest & History	1	1	5	3	57	346
Current Interest & Manual	2	0	45	211	206	169
History and Manual	0	1	0	0	0	8
Current Interest, History and Manual (all three)	0	0	1	1	67	155
Totals	44	37	164	409	474	1535
Mean Computer Processing Time (Standard Deviation) N			9.89 days (13.773) 57	15.23 days (12.648) 276	19.74 days (14.248) 408	19.17 days (9.825) 1398
Mean Manual Processing Time (Standard Deviation) N			13.34 days (18.173) 41	17.82 days (17.838) 249	27.52 days (19.502) 296	17.97 days (11.144) 414

Table 45

Evaluation of the Information Retrieval Center, Boulder, Colorado

Responses to Evaluation Questionnaire by Date

Question 1: Were the abstracts in this profile pertinent to your request?

Response	1969 July to Dec	1970 Jan to June	1970 July to Dec
100%	3	19	42
75%	2	43	93
50%	0	3	43
25%	2	19	77
0%	0	4	12
	7	88	267

Question 2: Were the Manual search materials (zeroxed articles, bibliography, pamphlets or books) in the profile pertinent?

100%	2	34	47
75%	0	26	36
50%	0	1	12
25%	2	10	15
0%	0	4	9
	4	75	119

Table 46

Evaluation of the Information Retrieval Center, Boulder, Colorado

Responses to Evaluation Questionnaire by Date

Question 3: Would you be willing to pay for educational information retrieval on a Cost-Per-Profile basis?

Response	1969 July to Dec	1970 Jan to June	1970 July to Dec
Yes	13	77	205
No	0	8	35

Additional Comments on Evaluation Form

Category of Response			
Generally Positive	9	34	87
Positive with Reservations	0	5	24
Negative	1	7	26
Neutral	1	7	17
Totals	11	53	154

Table 47

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Reading Requests by State or District

No. of Requests	%	State or District
52	35.8	1. Boulder Valley Public Schools, RE-2J
0	0	2. Westminster, Adams 50
1	0.7	3. Thornton-Northglenn, Eastlake, Adams 12
2	1.4	4. Loveland (Big Thompson), Larimer R-2J
5	3.4	5. Ft. Collins, Poudre, Larimer R-1
2	1.4	6. Longmont, St. Vrain Valley, Boulder RE-1J
0	0	7. Estes Park, Larimer R-3
20	13.8	8. Colorado not in NCBOCES
1	0.7	9. Nevada
12	8.3	10. South Dakota
20	13.8	11. Washington
3	2.1	12. Oregon
17	11.7	13. Utah
1	0.7	14. Wyoming
9	6.2	15. All other States
145	100.0	Total

Table 48

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Reading Requests by Occupation or Title

No. of Requests	%	Occupation or Title
1	0.78	1. Student
23	17.82	2. Teacher, Elementary
7	5.43	3. Teacher, Secondary
3	2.33	4. Teacher, College or University
8	6.20	5. Librarian
63	48.83	6. Specialists, Coordinators, Directors and Consultants
4	3.10	7. Pupil Personnel - Counselor, Psychologist
9	6.98	8. Administrator - Principal
7	5.43	9. Administrator - Superintendent
2	1.55	10. Layman
0	0	11. Other
2	1.55	12. Teacher, Special Education
129	100.00	Total

Table 49
Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Reading Requests by Institution

No. of Requests	%	Institution
42	30.21	1. Elementary School
17	12.23	2. High School, Junior High School
5	3.60	3. College or University
10	7.19	4. State Department of Education
2	1.44	5. Research Organization
52	37.41	6. District Administrative Unit
0	0	7. Teacher Training Institution
8	5.76	8. ERIC and Other Resource Centers
3	2.16	9. Other
0	0	10. Special Education Institution
139	99.73	Total

Table 50

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Reading Requests by Date of Request

No. of Requests	%	Date of Request
0	0.00	Prior to 1968
2	1.39	January to June 1968
2	1.39	July to December 1968
15	10.42	January to June 1969
19	13.19	July to December 1969
27	18.75	January to June 1970
79	54.87	July to December 1970

Mean Computer Processing Time (Standard Deviation)	17.82 days (13.675)
Mean Manual Processing Time (Standard Deviation)	21.26 days (18.519)

Number of Reading Requests by Type of Profile Sent

No. of Requests	%	Type of Profile
53	38.68	Current Interest only
2	1.46	History only
14	10.22	Manual only
15	10.95	Current Interest and History
39	28.47	Current Interest and Manual
0	0.00	History and Manual
14	10.22	Current Interest, History and Manual
137	100.00	Total

Table 51

Evaluation of Information Retrieval Center, Boulder, Colorado

Number of Reading Requests (ERIC Subject Code)
by HFRL Subject Code

No. of Reading Requests	%	HFRL Subject
29	19.73	Curriculum Development
19	12.92	Pupil Characteristics, Behavior and Guidance
74	50.33	Instructional Procedure and Techniques
4	2.72	Administrative Procedure and Organization
0	0.00	Teacher Education, Pre and In-Service
4	2.72	Subject Matter Topic
10	6.80	Special Education
7	4.76	Instructional Resources, Research
0	0.00	Other
147	99.98	Total

Table 52

Evaluation of the Information Retrieval Center, Boulder, Colorado

Number of Requests by ERIC Subject Code

Educational Administration

No. of Requests	%	State or District
310	32.1	1. Boulder Valley Public Schools, RE-2J
10	1.0	2. Westminster, Adams 50
34	3.5	3. Thornton-Northglenn, Eastlake, Adams 12
6	.6	4. Loveland (Big Thompson) Larimer R-2J
20	2.1	5. Ft. Collins, Poudre, Larimer R-1
25	2.6	6. Longmont, St. Vrain Valley, Boulder RE-1J
4	.4	7. Estes Park, Larimer R-3
161	16.7	8. Colorado not in NCBOCES
15	1.6	9. Nevada
120	12.4	10. South Dakota
135	14.0	11. Washington
14	1.4	12. Oregon
46	4.8	13. Utah
23	2.4	14. Wyoming
43	4.5	15. All other States
966	100.1	Total

Table 53

Evaluation of the Information Retrieval Center, Boulder, Colorado

ERIC Subject Code: Educational Administration

Number of Requests by Occupation or Title

No. of Requests	%	Occupation or Title
36	4.1	1. Student
57	6.5	2. Teacher, Elementary
52	5.9	3. Teacher, Secondary
32	3.7	4. Teacher, College or University
75	8.6	5. Librarian
342	29.1	6. Specialists, Coordinators, Directors and Consultants
19	2.2	7. Pupil Personnel - Counselor, Psychologist, and Nurse
131	15.0	8. Administrator - Principal
92	10.5	9. Administrator - Superintendent
8	.9	10. Layman
26	3.0	11. Other
4	.5	12. Teacher, Special Education
874	100.0	Total

Table 54

Evaluation of the Information Retrieval Center, Boulder, Colorado

ERIC Subject Code: Educational Administration

Number of Requests by Institution

No. of Requests	%	Institution
174	18.4	1. Elementary School
168	17.8	2. High School, Junior High School
94	9.9	3. College or University
70	7.4	4. State Department of Education
37	3.9	5. Research Organization
300	31.7	6. District Administrative Unit
3	.3	7. Teacher Training Institution
65	6.9	8. ERIC and Other Resource Centers
31	3.3	9. Other
3	.3	10. Special Education Institution
945	99.9	Total

Table 55

Evaluation of the Information Retrieval Center, Boulder, Colorado

ERIC Subject Code: Educational Administration

Number of Requests by Date of Request

No. of Requests	%	Date of Request
0	0	Prior to 1968
32	3.3	January to June 1968
22	2.3	July to December 1968
69	7.2	January to June 1969
162	16.8	July to December 1969
203	21.1	January to June 1970
475	49.3	July to December 1970
963	100.0	

Mean Computer Processing Time	17.79
(Standard Deviation)	(11.407)
Mean Manual Processing Time	19.31
(Standard Deviation)	(14.063)

Number of Requests by Type of Profile Sent

No. of Requests	%	Type of Profile
310	35.1	Current Interest only
14	1.6	History only
87	9.8	Manual only
122	13.8	Current Interest and History
259	29.3	Current Interest and Manual
3	.3	History and Manual
89	10.1	Current Interest, History and Manual
884	100.0	Total

Table 56

Evaluation of the Information Retrieval Center, Boulder, Colorado

ERIC Subject Code: Educational Administration

Number of Requests by HFRL Subject Code

No. of Requests	%	Subject of Requests
34	3.5	1. Curriculum Development
2	.2	2. Pupil Characteristics, Behavior, Guidance
215	22.0	3. Instructional Procedure and Techniques
716	73.2	4. Administrative Procedure and Organization
2	.2	5. Teacher Education, Pre and In-Service
3	.3	6. Subject Matter Topic
0	0	7. Special Education
6	.6	8. Instructional Resources, Research
978	100.0	Total

Table 57

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Curriculum Development

Number of Requests by State or District

No. of Requests	%	State or District
147	37.8	1. Boulder Valley Public Schools, RE-2J
1	.2	2. Westminster, Adams 50
13	3.3	3. Thornton-Northglenn, Eastlake, Adams 12
1	.2	4. Loveland (Big Thompson), Larimer R-1
16	4.1	5. Ft. Collins, Poudre, Larimer R-1
11	2.8	6. Longmont, St. Vrain Valley, Boulder RE-1J
5	1.2	7. Estes Park, Larimer R-3
42	10.8	8. Colorado not in NCBOCES
1	.2	9. Nevada
28	7.2	10. South Dakota
39	10.0	11. Washington
6	1.5	12. Oregon
50	12.8	13. Utah
9	2.3	14. Wyoming
19	4.8	15. All other States
388	99.2	Total

Table 58

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Curriculum Development

Number of Requests by Occupation or Title

No. of Requests	%	Occupation or Title
8	2.1	1. Student
34	9.2	2. Teacher, Elementary
76	20.5	3. Teacher, Secondary
14	3.7	4. Teacher, College or University
20	5.4	5. Librarian
143	38.7	6. Specialists, Coordinators, Directors and Consultants
12	3.2	7. Pupil Personnel - Counselor, Psychologist, and Nurse
26	7.0	8. Administrator - Principal
24	6.5	9. Administrator - Superintendent
3	.8	10. Layman
6	1.6	11. Other
3	.8	12. Teacher, Special Education
369	99.5	Total

Table 59

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Curriculum Development

Number of Requests by Institution

No. of Requests	%	Institution
53	13.7	1. Elementary School
111	28.8	2. High School, Junior High School
33	8.5	3. College or University
30	7.7	4. State Department of Education
9	2.3	5. Research Organization
95	24.6	6. District Administrative Unit
1	.2	7. Teacher Training Institution
38	9.8	8. ERIC and Other Resource Centers
13	3.3	9. Other
2	.5	10. Special Education Institution
385	99.4	Total

Table 60

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Curriculum Development

Number of Requests by Date of Request

No. of Requests	%	Date of Request
0	0	Prior to 1968
15	3.8	January to June 1968
14	3.6	July to December 1968
23	5.9	January to June 1969
49	12.6	July to December 1969
61	15.6	January to June 1970
228	58.5	July to December 1970
390	100.0	

Mean Computer Processing Time	19.24 days
(Standard Deviation)	(11.785)
Mean Manual Processing Time	23.85 days
(Standard Deviation)	(23.179)

Number of Requests by Type of Profile Sent

No. of Requests	%	Type of Profile
147	41.1	Current Interest only
8	2.2	History only
26	7.2	Manual only
79	22.1	Current Interest and History
63	17.6	Current Interest and Manual
0	0	History and Manual
34	9.5	Current Interest, History and Manual
357	99.7	Total

Table 61

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Curriculum Development

Number of Requests by ERIC Subject Code

No. of Requests	%	Subject of Request
0	0	1. Adult Education
1	.2	2. Counseling and Student Personnel Services
21	5.2	3. Disadvantaged
14	3.5	4. Early Childhood Education
34	8.5	5. Educational Administration
12	3.0	6. Educational Media and Technology
2	.5	7. Exceptional Children
3	.7	8. Higner Education
1	.2	9. Junior Colleges
10	2.5	10. Library and Information Services
4	1.0	11. Linguistics
29	7.2	12. Reading
0	0	13. Rural Education and Small Schools
57	14.2	14. Science and Mathematics Education
4	1.0	15. Teacher Education
39	9.7	16. Teaching of English
6	1.5	17. Teaching Foreign Languages
9	2.2	18. Tests, Measurements and Evaluation
48	12.0	19. Vocational and Technical Education
81	20.3	20. Social Science Education
23	5.7	21. Music, Art and Humanities Education
399	99.1	Total

Table 62

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Instructional Procedure and Techniques

Number of Requests by State or District

No. of Requests	%	State or District
217	36.2	1. Boulder Valley Public Schools, RE-2J
7	1.1	2. Westminster, Adams 50
11	1.8	3. Thornton-Northglenn, Eastlake, Adams 12
2	.3	4. Loveland (Big Thompson), Larimer R-1
18	3.0	5. Ft. Collins, Poudre, Larimer R-1
7	1.1	6. Longmont, St. Vrain Valley, Boulder RE-1J
2	.3	7. Estes Park, Larimer R-3
79	13.1	8. Colorado not in NCBOCES
12	2.0	9. Nevada
65	10.8	10. South Dakota
84	14.0	11. Washington
15	2.5	12. Oregon
56	9.3	13. Utah
5	.8	14. Wyoming
19	3.1	15. All other States
599	99.4	Total

Table 63

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Instructional Procedure and Techniques

Number of Requests by Occupation or Title

No. of Requests	%	Occupation or Title
17	3.1	1. Student
69	12.7	2. Teacher, Elementary
84	15.5	3. Teacher, Secondary
20	3.7	4. Teacher, College or University
47	8.7	5. Librarian
200	37.0	6. Specialists, Coordinators, Directors and Consultants
11	2.0	7. Pupil Personnel - Counselor, Psychologist, and Nurse
52	9.6	8. Administrator - Principal
32	5.9	9. Administrator - Superintendent
2	.3	10. Layman
3	.5	11. Other
3	.5	12. Teacher, Special Education
540	99.5	Total

Table 64

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Instructional Procedure and Techniques

Number of Requests by Institution

No. of Requests	%	Institution
147	24.7	1. Elementary School
145	24.3	2. High School, Junior High School
53	8.9	3. College or University
40	6.7	4. State Department of Education
19	3.1	5. Research Organization
156	26.2	6. District Administrative Unit
3	.5	7. Teacher Training Institution
22	3.6	8. ERIC and Other Resource Centers
9	1.5	9. Other
1	.1	10. Special Education Institution
595	99.6	Total

Table 65

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Instructional Procedures and Techniques

Number of Requests by Date of Request

No. of Requests	%	Date of Request
1	.1	Prior to 1968
33	5.4	January to June 1968
21	3.4	July to December 1968
47	7.7	January to June 1969
78	12.8	July to December 1969
93	15.3	January to June 1970
334	55.0	July to December 1970
607	99.7	

Mean Computer Processing Time (Standard Deviation)	18.44 days (10.639)
Mean Manual Processing Time (Standard Deviation)	21.87 days (16.155)

Number of Requests by Type of Profile Sent

No. of Requests	%	Type of Profile
219	39.1	Current Interest only
10	1.7	History only
62	11.0	Manual only
80	14.2	Current Interest and History
150	26.7	Current Interest and Manual
2	.3	History and Manual
37	6.6	Current Interest, History and Manual
560	99.6	Total

Table 66

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Instructional Procedures and Techniques

Number of Requests by ERIC Subject Code

No. of Requests	%	Subject of Request
1	.2	1. Adult Education
14	2.3	2. Counseling and Student Personnel Services
7	1.1	3. Disadvantaged
5	.8	4. Early Childhood Education
215	34.8	5. Educational Administration
44	7.1	6. Educational Media and Technology
6	1.0	7. Exceptional Children
2	.3	8. Higner Education
1	.2	9. Junior Colleges
34	5.5	10. Library and Information Services
3	.5	11. Linguistics
74	12.0	12. Reading
1	.2	13. Rural Education and Small Schools
69	11.2	14. Science and Mathematics Education
6	1.0	15. Teacher Education
27	4.4	16. Teaching of English
8	1.3	17. Teaching Foreign Languages
16	2.6	18. Tests, Measurements and Evaluation
26	4.2	19. Vocational and Technical Education
44	7.1	20. Social Science Education
15	2.4	21. Music, Art and Humanities Education
618	100.2	Total

Table 67

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Administrative Procedure and Organization

Number of Requests by State or District

No. of Requests	%	State or District
249	30.1	1. Boulder Valley Public Schools, RE-2J
7	.8	2. Westminster, Adams 50
29	3.5	3. Thornton-Northglenn, Eastlake, Adams 12
5	.6	4. Loveland (Big Thompson), Larimer R-1
14	1.6	5. Ft. Collins, Poudre, Larimer R-1
22	2.6	6. Longmont, St. Vrain Valley, Boulder RE-1J
4	.4	7. Estes Park, Larimer R-3
140	16.9	8. Colorado not in NCBOCES
13	1.5	9. Nevada
109	13.1	10. South Dakota
117	14.1	11. Washington
17	2.0	12. Oregon
38	4.6	13. Utah
22	2.6	14. Wyoming
40	4.8	15. All other States
826	99.2	Total

Table 68

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Administrative Procedure and Organization

Number of Requests by Occupation or Title

No. of Requests	%	Occupation or Title
31	4.1	1. Student
34	4.5	2. Teacher, Elementary
35	4.6	3. Teacher, Secondary
27	3.6	4. Teacher, College or University
77	10.3	5. Librarian
304	40.6	6. Specialists, Coordinators, Directors and Consultants
14	1.8	7. Pupil Personnel - Counselor, Psychologist, and Nurse
111	14.8	8. Administrator - Principal
81	10.8	9. Administrator - Superintendent
7	.9	10. Layman
25	3.3	11. Other
1	.1	12. Teacher, Special Education
747	99.4	Total

Table 69

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Administrative Procedure and Organization

Number of Requests by Institution

No. of Requests	%	Institution
129	16.0	1. Elementary School
138	17.2	2. High School, Junior High School
83	10.3	3. College or University
65	8.1	4. State Department of Education
30	3.7	5. Research Organization
262	32.6	6. District Administrative Unit
1	.1	7. Teacher Training Institution
65	8.1	8. ERIC and Other Resource Centers
29	3.6	9. Other
1	.1	10. Special Education Institution
804	99.8	Total

Table 70

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Administrative Procedure and Organization

Number of Requests by Date of Request

No. of Requests	%	Date of Request
0	0	Prior to 1968
16	1.9	January to June 1968
16	1.9	July to December 1968
59	7.1	January to June 1969
142	17.3	July to December 1969
175	21.3	January to June 1970
411	50.1	July to December 1970
819		

Mean Computer Processing Time (Standard Deviation)	17.67 days (11.711)
Mean Manual Processing Time (Standard Deviation)	18.82 days (13.842)

Number of Requests by Type of Profile Sent

No. of Requests	%	Type of Profile
268	35.0	Current Interest only
9	1.1	History only
30	10.4	Manual only
103	13.4	Current Interest and History
221	28.9	Current Interest and Manual
3	.3	History and Manual
80	10.4	Current Interest, History and Manual
764	99.9	Total

Table 71

Evaluation of the Information Retrieval Center, Boulder, Colorado

HFRL Subject Code: Administrative Procedure and Organization

Number of Requests by ERIC Subject Code

No. of Requests	%	Subject of Request
1	.1	1. Adult Education
3	.4	2. Counseling and Student Personnel Services
1	.1	3. Disadvantaged
4	.5	4. Early Childhood Education
716	86.0	5. Educational Administration
20	2.4	6. Educational Media and Technology
1	.1	7. Exceptional Children
8	1.0	8. Higner Education
7	.8	9. Junior Colleges
33	4.0	10. Library and Information Services
0	0	11. Linguistics
4	.5	12. Reading
6	.7	13. Rural Education and Small Schools
4	.5	14. Science and Mathematics Education
0	0	15. Teacher Education
2	.2	16. Teaching of English
1	.1	17. Teaching Foreign Languages
8	1.0	18. Tests, Measurements and Evaluation
9	1.1	19. Vocational and Technical Education
3	.4	20. Social Science Education
2	.2	21. Music, Art and Humanities Education
833	100.1	Total

Appendix D

User Questionnaire

Evaluation Questionnaire

TION I. Please respond to the fcllowing items by checking in the appropriate space or writing your response in the space provided. You will not be asked to identify yourself.

Please check the main purpose(s) for which you used the services of the Resources Center.

____1. General knowledge about subject area
____2. Research
____3. Assignments and term papers
____4. Preparation or updating of course bibliographies
____5. Curriculum revision
____6. Preparation of a speech or report
____7. Methods of classroom instruction
____8. School administration problems
____9. Other (explain)_____
_____

Where or how did you first hear about the services of the Resource Center?

____1. Work associates
____2. Newspaper
____3. Bulletins and newsletters
____4. Staff meeting
____5. Presentation by Resource Center Personnel
____6. Other _____

How useful have you found the information provided by the Information Retrieval Center?

1. Not Useful ____ 2. ____ 3. Moderately Useful ____ 4. ____ 5. Very Useful

Have the abstracts in the profiles (computer) and the manual search materials sent you usually been pertinent to your request?

Computer abstracts: ____yes ____no ____not applicable
Manual search: ____yes ____no ____not applicable

Which one of the following statements best describes the information you have received from the Center?

____1. All the information I received would not have otherwise been available.
____2. Most of the information I received would not have otherwise been available.
____3. Some of the information I received would not have otherwise been available.
____4. Essentially, all of the information I received would have otherwise been available.

Which of the following materials or equipment are most lacking in your work situation?

____1. Microfiche reader
____2. Microfiche reader-printer
____3. Microfiche duplicator
____4. Government reports
____5. Adequate library facilities close by

Which, if any, of the following problems have you encountered in using the services of the Resources Center?

1. ____Profile too general
2. ____Too much information to wade through
3. ____Information not pertinent to request
4. ____Too little information
5. ____Complete documents (hardcopy or microfiche) not available
6. ____Microfiche reader not readily available
7. ____Took too long to process request
8. ____Confusion as to what kind of information the Center can provide
9. ____No problems were encountered
10. ____Other (explain) _____

Rank the following suggestions for improving the Center's services by placing "1" beside the most needed, "2" beside the next most, etc., and "5" beside the least needed improvement.

____ 1. More specific request forms
____ 2. More accurate computer search
____ 3. Shorten the processing time of requests
____ 4. Provide more expanded subject area coverage
____ 5. Keep expanding and updating the data base

Any other suggestions? _____

Can you cite any instances where information from the Resources Center has contributed to changes in programs and practices?

TION II. This scale has been prepared so that you can indicate how you feel about the Information Retrieval Center. Please respond to every item. In each case, draw a circle around the letter which represents your own reaction as follows:

SA if you strongly agree with the statement
A if you agree but not strongly so
N if you are neutral or undecided
D if you disagree but not strongly so
SD if you strongly disagree with the statement

The Retrieval Center has been a real help to me. . . . . SA A N D SD

I feel the Federal Government is not justified in supporting the cost of the Retrieval Center. . . . . SA A N D SD

The Retrieval Center should be continued and expanded. . . . . SA A N D SD

The Retrieval is of questionable value. . . . . SA A N D SD

The idea behind the Retrieval Center is a good one. . . . . SA A N D SD

Children are benefiting because of the existence of the Retrieval Center. . SA A N D SD

ION III.

Please check the geographic area where you work.

Within Colorado:

____1. Boulder Valley District RE-2J
____2. Westminster, Adams 50
____3. Thornton-Northglenn, Eastlake, Adams 12
____4. Loveland, Big Thompson, Larimer R-2J
____5. Fort Collins, Poudre, Larimer R-1 District
____6. Longmont, St. Vrain Valley, Boulder RE-1J
____7. Estes Park, Larimer R-3 District
____8. Other towns and school districts within Colorado but not listed above

Other States Outside Colorado:

____ 9. Nevada
____10. South Dakota
____11. Washington
____12. Oregon
____13. Utah
____14. Wyoming
____15. Other states not listed above

Please check the occupation category which best describes your present position.

____1. Student
____2. Teacher, Elementary
____3. Teacher, Secondary
____4. Teacher, college or university
____5. Librarian
____6. Specialists, coordinators, directors, consultant, research specialist
____7. Pupil personnel--counselor, psychologist, school nurse
____ 8. Administrator - principal
____ 9. Administrator - superintendent
____10. Laymen
____11. Other _____
____12. Teacher - special education

Please check the number of years of professional experience you have had.

____1. Less than 5 years
____2. 5-9 years
____3. 10-14 years
____4. 15-19 years
____5. 20-24 years
____6. More than 25 years

Appendix E

Cross Classification Tables
for User Questionnaire

Tables 72-80 - Cross Classification Tables by Geographic Area

Tables 81-89 - Cross Classification Tables by Occupation Category

Tables 90-98 - Cross Classification Tables by Years of Professional Experience

Table 72

Responses to User Questionnaire by Geographic Area

Question 1: Please check the main purpose(s) for which you used the services of the Resources Center.

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
1. General knowledge about subject area	27	18.7	25	14.9
2. Research	38	26.4	34	20.2
3. Assignments and term papers	8	5.6	6	3.6
4. Preparation or updating of course bibliographies	4	2.8	5	3.0
5. Curriculum revision	22	15.3	25	14.9
6. Preparation of a speech or report	8	5.6	9	5.4
7. Methods of classroom instruction	19	13.2	31	18.5
8. School Administration problems	13	9.0	19	11.3
9. Other	5	3.5	14	8.3
Total	144	100.1	168	100.1

Table 73

Responses to User Questionnaire by Geographic Area

Question 2: Where or how did you first hear about the services of the Resource Center?

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
1. Work associates	31	34.1	26	25.0
2. Newspaper	3	3.3	1	1.0
3. Bulletins and Newsletters	4	4.4	11	10.6
4. Staff meeting	14	15.4	8	7.7
5. Presentation by Resource Center Personnel	31	34.1	29	27.9
6. Other	8	8.8	29	27.9
Total	91	100.1	104	100.1

Table 74

Responses to User Questionnaire by Geographic Area

Question 3: How useful have you found the information provided by the Information Retrieval Center?

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
1. Not useful	6	8.3	7	7.7
2.	3	4.2	14	15.4
3. Moderately useful	20	27.8	22	24.2
4.	17	23.6	24	26.4
5. Very useful	26	36.1	24	26.4
Total	72	100.0	91	100.1
Mean Response	3.750		3.484	
Standard Deviation	1.222		1.244	

Table 75

Responses to User Questionnaire by Geographic Area

Question 4: Have the abstracts in the profiles (computer) and the manual search materials sent you usually been pertinent to your request?

Computer Abstracts

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
Yes	57	87.7	61	79.2
No	6	9.2	9	11.7
Not Applicable	2	3.1	7	9.1
Total	65	100.0	77	100.0

Manual Search Materials

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
Yes	48	81.4	38	61.3
No	2	3.4	5	8.1
Not Applicable	9	15.3	19	30.6
Total	59	100.1	62	100.0

Table 76

Responses to User Questionnaire by Geographic Area

Question 5: Which one of the following statements best describes the information you have received from the Center?

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
All the information I received would not have otherwise been available.	3	4.2	5	5.7
Most of the information I received would not have otherwise been available.	28	39.4	55	63.2
Some of the information I received would not have otherwise been available.	29	40.8	21	24.1
Essentially, all of the information I received would have otherwise been available.	11	15.5	6	6.9
Total	71	99.9	87	99.9

Table 77

Responses to User Questionnaire by Geographic Area

Question 6: Which of the following materials or equipment are most lacking in your work situation?

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
Microfiche reader	20	17.4	34	24.6
Microfiche reader-printer	26	22.6	26	18.8
Microfiche duplicator	25	21.7	33	23.9
Government Reports	24	20.9	16	11.6
Adequate library facilities close by	20	17.4	29	21.0
Total	115	100.0	138	99.9

Table 78

Responses to User Questionnaire by Geographic Area

Question 7: Which, if any, of the following problems have you encountered in using the services of the Resources Center?

Response	Colorado f	Colorado %	Outside Colorado f	Outside Colorado %
Profile too general	15	14.4	15	10.5
Too much information to wade through	7	6.7	6	4.2
Information not pertinent to request	12	11.5	22	15.4
Too little information	11	10.6	13	9.1
Complete documents (hardcopy or microfiche) not available	4	3.8	13	9.1
Microfiche reader not readily available	10	9.6	16	11.2
Took too long to process request	9	8.7	23	16.1
Confusion as to what kind of information the Center can provide	8	7.7	9	6.3
No problems were encountered	26	25.0	17	11.9
Other	2	1.9	9	6.3
Total	104	99.9	143	100.1

Table 79

Responses to User Questionnaire by Geographic Area

Question 8: Rank the following suggestions for improving the Center's services by placing "1" beside the most needed, "2" beside the next most, etc., and "5" beside the least needed improvement.

Colorado

Response	Rank: 1 f	1 %	2 f	2 %	3 f	3 %	4 f	4 %	5 f	5 %	Mean Rank
More specific request forms (N=47)	11	23.4	4	8.5	9	19.1	8	17.0	15	31.9	3.255
More accurate computer search(N=44)	8	18.2	4	9.1	7	15.9	17	38.6	8	18.2	3.295
Shorten the processing time of requests (N=47)	6	12.8	9	19.1	9	19.1	8	17.0	15	31.9	3.362
Provide more expanded subject area coverage (N=53)	19	35.8	16	30.2	14	26.4	1	1.9	3	5.7	2.113
Keep expanding and updating the data base (N=59)	27	45.8	15	25.4	5	8.5	8	13.6	4	6.8	2.102

Outside Colorado

Response	Rank: 1 f	1 %	2 f	2 %	3 f	3 %	4 f	4 %	5 f	5 %	Mean Rank
More specific request forms (N=62)	14	22.6	8	12.9	13	21.0	12	19.4	15	24.2	3.097
More accurate computer search (N=56)	6	10.7	6	10.7	7	12.5	16	28.6	21	37.5	3.714
Shorten the processing time of requests (N=65)	25	38.5	10	15.4	10	15.4	10	15.4	10	15.4	2.538
Provide more expanded subject area coverage (N=61)	17	27.9	17	27.9	14	23.0	9	14.8	4	6.6	2.443
Keep expanding and updating the data base (N=62)	26	41.9	19	30.6	8	12.9	5	8.1	4	6.5	2.065

Table 80

Response to User Questionnaire by Geographic Area

Attitude Scale

Colorado

Question	No. of Responses SA(1)	A(2)	N(3)	D(4)	SD(5)	Mean Score
10. The Retrieval Center has been a real help to me.	26	30	9	5	1	1.944
12. The Retrieval Center should be continued and expanded	44	24	2	0	1	1.451
14. The idea behind the Retrieval Center is a good one	52	16	2	0	1	1.338
15. Children are benefiting because of the existence of the Retrieval Center.	19	24	24	2	1	2.171
	SA(5)	A(4)	N(3)	D(2)	SD(1)	
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center	2	2	7	21	39	1.690
13. The Retrieval is of questionable value . . .	0	5	5	18	42	1.614

Mean Total Attitude Score for Colorado Sample: 10.294
Standard Deviation 3.439

Outside Colorado

Question	No. of Responses SA(1)	A(2)	N(3)	D(4)	SD(5)	Mean Score
10. The Retrieval Center has been a real help to me.	30	33	16	6	4	2.112
12. The Retrieval Center should be continued and expanded	50	27	9	3	2	1.681
14. The idea behind the Retrieval Center is a good one.	61	20	4	3	0	1.420
15. Children are benefiting because of the existence of the Retrieval Center, ...	18	33	32	4	2	2.315
	SA(5)	A(4)	N(3)	D(2)	SD(1)	
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center.	2	6	12	28	42	1.867
13. The Retrieval is of questionable value. . .	1	5	9	34	41	1.789

Mean Total Attitude Score for Outside Colorado: 11.161
Standard Deviation 4.397

Table 81

Responses to User Questionnaire by Occupation Category

Question 1: Please check the main purpose(s) for which you used the services of the Resources Center.

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
1. General knowledge about subject area	25	15.8	26	18.3
2. Research	35	22.2	33	23.2
3. Assignments and term papers	3	1.9	10	7.0
4. Preparation or updating of course bibliographies	4	2.5	4	2.8
5. Curriculum revision	29	18.4	17	12.0
6. Preparation of a speech or report	8	5.1	9	6.3
7. Methods of classroom instruction	19	12.0	30	21.1
8. School Administration Problems	24	15.2	8	5.6
9. Other	11	7.0	5	3.5
Total	158	100.1	142	99.8

Table 82

Responses to User Questionnaire by Occupation Category

Question 2: Where or how did you first hear about the services of the Resource Center?

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
1. Work associates	30	32.6	23	25.3
2. Newspaper	1	1.1	3	3.3
3. Bulletins and Newsletters	9	9.8	5	5.5
4. Staff meeting	8	8.7	13	14.3
5. Presentation by Resource Center Personnel	26	28.3	32	35.2
6. Other	18	19.6	15	16.5
Total	92	100.1	91	100.1

Table 83

Responses to User Questionnaire by Occupation Category

Question 3: How useful have you found the information provided by the Information Retrieval Center?

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
1. Not useful	2	2.5	9	12.2
2.	10	12.7	7	9.5
3. Moderately useful	15	19.0	24	32.4
4.	27	34.2	12	16.2
5. Very useful	25	31.6	22	29.7
Total	79	100.0	74	100.0
Mean Response	3.797		3.419	
Standard Deviation	1.095		1.325	

Table 84

Responses to User Questionnaire by Occupation Category

Question 4: Have the abstracts in the profiles (computer) and the Manual search materials sent you usually been pertinent to your request?

Computer Abstracts

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
Yes	58	86.6	55	83.3
No	5	7.5	9	13.6
Not Applicable	4	6.0	2	3.0
Total	67	100.1	66	99.9

Manual Search Materials

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
Yes	39	70.9	42	72.4
No	3	5.5	4	6.9
Not Applicable	13	23.6	12	20.7
Total	55	100.1	58	100.0

Table 85

Responses to User Questionnaire by Occupation Category

Question 5: Which one of the following statements best describes the information you have received from the Center?

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
All the information I received would not have otherwise been available.	5	6.6	3	4.1
Most of the information I received would not have otherwise been available.	45	59.2	34	46.6
Some of the Information I received would not have otherwise been available.	21	27.6	26	35.6
Essentially, all of the information I received would have otherwise been available.	5	6.6	10	13.7
Total	76	100.0	73	100.0

Table 86

Responses to User Questionnaire by Occupation Category

Question 6: Which of the following materials or equipment are most lacking in your work situation?

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
Microfiche reader	25	19.5	26	22.6
Microfiche reader-printer	28	21.9	21	18.3
Microfiche duplicator	31	24.3	25	21.7
Government Reports	19	14.8	20	17.4
Adequate library facilities close by	25	19.5	23	20.0
Total	128	100.0	115	100.0

Table 87

Responses to User Questionnaire by Occupation Category

Question 7: Which, if any, of the following problems have you encountered in using the services of the Resources Center?

Response	Administrators f	Administrators %	Non-Administrators f	Non-Administrators %
Profile too general	17	14.4	11	9.6
Too much information to wade through	7	5.9	6	5.3
Information not pertiment to request	13	11.0	19	16.7
Too little information	6	5.1	15	13.2
Complete documents (hardcopy or microfiche) not available	11	9.3	5	4.4
Microfiche reader not readily available	16	13.6	9	7.9
Took too long to process request	15	12.7	16	14.0
Confusion as to what kind of information the Center can provide	7	5.9	9	7.9
No problems were encountered	20	17.0	21	18.4
Other	6	5.1	3	2.6
Total	118	100.0	114	100.0

Table 88

Responses to User Questionnaire by Occupation Category

Question 8: Rank the following suggestions for improving the Center's services by placing "1" beside the most needed, "2" beside the next most, etc., and "5" beside the least needed improvement.

Administrators

Response	Rank: 1 f	1 %	2 f	2 %	3 f	3 %	4 f	4 %	5 f	5 %	Mean Rank
More specific request forms (n=51)	15	29.4	5	9.8	10	19.6	8	15.7	13	25.5	2.980
More accurate computer search (n=46)	4	8.7	9	19.6	5	10.9	15	32.5	13	28.3	3.522
Shorten the processing time of requests (n=51)	17	33.4	10	19.6	7	13.7	8	15.7	9	17.6	2.647
Provide more expanded subject area coverage (n=51)	18	35.3	10	19.6	13	25.5	6	11.8	4	7.8	2.373
Keep expanding and updating the data base (n=57)	22	38.6	17	29.8	9	15.8	6	10.5	3	5.3	2.140

Non-Administrators

Response	Rank: 1 f	1 %	2 f	2 %	3 f	3 %	4 f	4 %	5 f	5 %	Mean Rank
More specific request forms (n=53)	10	18.9	7	13.2	12	22.6	9	17.0	15	28.3	3.226
More accurate computer search (n=49)	8	16.3	1	2.0	8	16.3	17	34.8	15	30.6	3.612
Shorten the processing time of requests (n=56)	14	25.0	9	16.1	10	17.8	9	16.1	14	25.0	3.000
Provide more expanded subject area coverage (n=58)	16	27.6	31	36.2	14	24.1	4	6.9	3	5.2	2.259
Keep expanding and updating the data base (n=57)	28	49.0	14	24.6	3	5.3	7	12.3	5	8.8	2.070

Table 89

Responses to User Questionnaire by Occupation Category

Attitude Scale

Administrators

Question	No. of Responses SA(1)	A(2)	N(3)	D(4)	SD(5)	Mean Score
10. The Retrieval Center has been a real help to me.	30	32	10	6	1	1.937
12. The Retrieval Center should be continued and expanded	47	25	5	1	1	1.532
14. The idea behind the Retrieval Center is a good one	55	16	4	2	0	1.390
15. Children are benefiting because of the existence of the Retrieval Center.	21	33	22	1	1	2.077
	SA(5)	A(4)	N(3)	D(2)	SD(1)	
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center.	1	5	6	21	46	1.658
13. The Retrieval is of questionable value	0	5	5	25	43	1.641

Mean Total Attitude Score for Administrators: 10.224
Standard Deviation 3.789

Non-Administrators

	SA(1)	A(2)	N(3)	D(4)	SD(5)	Mean Score
10. The Retrieval Center has been a real help to me.	23	27	13	4	4	2.141
12. The Retrieval Center should be continued and expanded	42	21	6	2	2	1.644
14. The idea behind the Retrieval Center is a good one	51	17	2	1	1	1.389
15. Children are benefiting because of the existence of the Retrieval Center.	14	19	31	5	2	2.465
	SA(5)	A(4)	N(3)	D(2)	SD(1)	
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center.	3	3	12	26	28	1.986
13. The Retrieval is of questionable value.	1	5	9	23	34	1.833

Mean Total Attitude Score for Non-Administrators: 11.536
Standard Deviation 4.312

Table 90

Responses to User Questionnaire by Years Professional Experience

Question 1: Please check the main purpose(s) for which you used the services of the Resources Center.

Response	Less Than 5 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		More Than 25 Years	
	f	%	f	%	f	%	f	%	f	%	f	%
1. General knowledge about subject area	5	11.4	11	18.6	15	19.5	12	17.9	5	13.2	5	17.9
2. Research	13	29.5	15	25.4	21	27.2	12	17.9	7	18.4	4	14.3
3. Assignments and term papers	4	9.1	3	5.1	4	5.2	1	1.5	1	2.6	1	3.6
4. Preparation or updating of course bibliographies	0		2	3.4	2	2.6	2	3.0	3	7.9	0	
5. Curriculum revision	5	11.4	9	15.3	12	15.6	9	13.4	7	18.4	5	17.9
6. Preparation of a speech or report	2	4.5	5	8.5	3	3.9	5	7.5	0		2	7.1
7. Methods of classroom instruction	11	25.1	12	20.3	7	9.1	9	13.4	5	13.2	6	21.3
8. School Administration problems	2	4.5	2	3.4	9	11.7	9	13.4	6	15.8	4	14.3
9. Other	2	4.5	0		4	5.2	8	12.0	4	10.5	1	3.6
Total	44	100.0	59	100.0	77	100.0	67	100.0	38	100.0	28	100.0

Table 91

Responses to User Questionnaire by Years Professional Experience

Question 2: Where or how did you first hear about the services of the Resource Center?

Response	Less Than 5 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		More Than 25 Years	
	f	%	f	%	f	%	f	%	f	%	f	%
1. Work Associates	9	33.2	9	23.7	18	34.6	13	31.0	3	15.0	5	29.4
2. Newspaper	1	3.7	2	5.3	1	1.9	0		0		0	
3. Bulletins and Newsletters	1	3.7	3	7.9	5	9.6	2	4.8	1	5.0	3	17.6
4. Staff Meeting	4	14.8	6	15.8	4	7.7	4	9.5	4	20.0	0	
5. Presentation by Resource Center Personnel	6	22.3	10	26.2	17	32.7	16	38.0	7	35.0	5	29.4
6. Other	6	22.3	8	21.1	7	13.5	7	16.7	5	25.0	4	23.6
Total	27	100.0	38	100.0	52	100.0	42	100.0	20	100.0	17	100.0

Table 92

Responses to User Questionnaire by Years of Professional Experience

Question 3: How useful have you found the information provided by the Information Retrieval Center?

Response	Less Than 5 Years f	Less Than 5 Years %	5-9 Years f	5-9 Years %	10-14 Years f	10-14 Years %	15-19 Years f	15-19 Years %	20-24 Years f	20-24 Years %	More Than 25 Years f	More Than 25 Years %
1. Not Useful	2	8.0	3	9.7	2	4.8	4	11.4	1	5.3	1	8.3
2.	2	8.0	1	3.2	9	21.4	3	8.6	1	5.3	1	8.3
3. Moderately Useful	10	40.0	3	9.7	9	21.4	14	40.0	4	21.1	2	16.7
4.	5	20.0	14	45.2	10	23.8	4	11.4	6	31.6	2	16.7
5. Very Useful	6	24.0	10	32.2	12	28.6	10	28.6	7	36.7	6	50.0
Total	25	100.0	31	100.0	42	100.0	35	100.0	19	100.0	12	100.0

Table 93

Responses to User Questionnaire by Years of Professional Experience

Question 4: Have the abstracts in the profiles (computer) and the manual search materials sent you usually been pertinent to your request?

Computer Abstracts

Response	Less Than 5 Years f	%	5-9 Years f	%	10-14 Years f	%	15-19 Years f	%	20-24 Years f	%	More Than 25 Years f	%
Yes	17	68.0	21	84.0	34	87.1	24	82.8	16	94.1	7	87.5
No	4	16.0	4	16.0	4	10.3	3	10.3	0		0	
Not Applicable	4	16.0	0	____	1	2.6	2	6.9	1	5.9	1	12.5
Total	25	100.0	25	100.0	39	100.0	29	100.0	17	100.0	8	100.0

Manual Search Materials

Response	Less Than 5 Years f	%	5-9 Years f	%	10-14 Years f	%	15-19 Years f	%	20-24 Years f	%	More Than 25 Years f	%
Yes	12	60.0	21	87.5	19	61.3	16	61.5	11	84.6	8	100.0
No	1	5.0	1	4.2	3	9.7	2	7.7	0		0	
Not Applicable	7	35.0	2	8.3	9	29.0	8	30.8	2	15.4	0	____
Total	20	100.0	24	100.0	31	100.0	26	100.0	13	100.0	8	100.0

Table 94

Responses to User Questionnaire by Years of Professional Experience

Question 5: Which one of the following statements best describes the information you have received from the Center?

Response	Less Than 5 Years f	%	5-9 Years f	%	10-14 Years f	%	15-19 Years f	%	20-24 Years f	%	More Than 25 Years f	%
All the information I received would not have otherwise been available.	0		0		4	9.8	2	5.9	0		2	15.4
Most of the information I received would not have otherwise been available.	16	66.6	12	40.0	23	56.0	15	44.1	9	52.9	8	61.5
Some of the information I received would not have otherwise been available.	7	29.2	12	40.0	10	24.4	13	38.2	8	47.1	1	7.7
Essentially, all of the information I received would have otherwise been available.	1	4.2	6	20.0	4	9.8	4	11.8	0		2	15.4
Total	24	100.0	30	100.0	41	100.0	34	100.0	17	100.0	13	100.0

Table 95

Responses to User Questionnaire by Years of Professional Experience

Question 6: Which of the follcwing materials or equipment are most lacking in your work situation?

Response	Less Than 5 Years f	%	5-9 Years f	%	10-14 Years f	%	15-19 Years f	%	20-24 Years f	%	More Than 25 Years f	%
Microfiche Reader	7	22.6	11	20.0	13	20.9	11	19.0	5	23.8	7	26.9
Microfiche Reader-Printer	5	16.0	11	20.0	14	22.6	13	22.4	2	9.5	7	26.9
Microfiche Duplicator	7	22.6	12	21.8	14	22.6	14	24.1	4	19.0	7	26.9
Government Reports	6	19.4	11	20.0	7	11.3	11	19.0	4	19.0	1	3.8
Adequate Library Facilities Close By	6	19.4	10	18.2	14	22.6	9	15.5	6	28.7	4	15.5
Total	31	100.0	55	100.0	62	100.0	58	100.0	21	100.0	26	100.0

Table 96

Responses to User Questionnaire by Years of Professional Experience

Question 7: Which, if any, of the following problems have you encountered in using the services of the Resources Center?

Response	Less Than 5 Years f	Less Than 5 Years %	5-9 Years f	5-9 Years %	10-14 Years f	10-14 Years %	15-19 Years f	15-19 Years %	20-24 Years f	20-24 Years %	More Than 25 Years f	More Than 25 Years %
Profile too general	6	14.0	6	12.2	5	8.5	8	17.4	4	12.9	1	5.0
Too much information to wade through	0		3	6.1	4	6.8	1	2.2	3	9.7	2	10.0
Information not pertinent to request	11	25.4	8	16.3	5	8.5	5	10.9	3	9.7	2	10.0
Too little information	4	9.3	2	4.1	7	11.9	6	13.0	5	16.1	0	
Complete documents (hardcopy or microfiche) not available	2	4.7	4	8.3	7	11.9	2	4.3	0		2	10.0
Microfiche reader not readily available	2	4.7	8	16.3	7	11.9	5	10.9	1	3.2	3	15.0
Took too long to process request	10	23.2	6	12.2	8	13.5	4	8.7	3	9.7	2	10.0
Confusion as to what kind of information the Center can provide	3	7.0	3	6.1	3	5.1	4	8.7	4	12.9	0	
No problems were encountered	3	7.0	7	14.3	10	16.8	10	21.7	7	22.6	6	30.0
Other	2	4.7	2	4.1	3	5.1	1	2.2	1	3.2	2	10.0
Total	43	100.0	49	100.0	59	100.0	46	100.0	31	100.0	20	100.0

Table 97

Responses to User Questionnaire by Years of Professional Experience

Summary Table

Question 8: Rank the following suggestions for improving the Center's services by placing "1" beside the most needed, "2" beside the next most, etc., and "5" beside the least needed improvement.

Response	Less Than 5 Yrs		5-9 Years		10-14 Years		15-19 Years		20-24 Years		More Than 25 Yrs	
	N	Mean Rank	N	Mean Rank	N	Mean Rank	N	Mean Rank	N	Mean Rank	N	Mean Rank
More specific request forms	24	3.208	23	2.826	28	3.429	16	2.559	11	3.364	8	2.875
More accurate computer search	23	3.652	19	3.263	31	3.645	11	1.967	10	3.400	7	4.286
Shorten the Processing time of requests	24	3.250	24	2.875	33	2.727	13	2.675	11	2.818	8	3.250
Provide more expanded subject area coverage	23	2.435	23	2.348	33	2.303	16	1.184	13	2.231	7	2.286
Keep expanding and updating the data base	23	2.522	24	2.083	34	2.206	19	.532	12	2.167	10	1.500

Table 98

Responses to User Questionnaire by Years of Professional Experience

Attitude Scale

Summary Table

Question	Less Than 5 Years N	Less Than 5 Years Mean Score*	5-9 Years N	5-9 Years Mean Score*	10-14 Years N	10-14 Years Mean Score*	15-19 Years N	15-19 Years Mean Score*	20-24 Years N	20-24 Years Mean Score*	More Than 25 Years N	More Than 25 Years Mean Score*
10. The Retrieval Center has been a real help to me.	25	2.240	30	1.867	40	2.250	34	2.176	18	1.611	14	1.714
11. I feel the Federal Government is not justified in supporting the cost of the Retrieval Center	25	1.960	31	1.806	41	1.976	33	1.606	18	1.556	14	1.643
12. The Retrieval Center should be continued and expanded	25	1.440	31	1.387	41	1.634	33	1.667	19	1.579	14	1.929
13. The Retrieval is of questionable value . .	25	1.640	31	1.742	40	1.825	33	1.727	18	1.556	14	1.643
14. The idea behind the Retrieval Center is a good one	24	1.292	31	1.419	41	1.439	32	1.313	18	1.389	14	1.500
15. Children are benefiting because of the existence of the Retrieval Center.	25	2.400	31	2.129	40	2.375	32	2.219	18	2.167	14	2.143
Mean Total Score (Sum of all scores)	25	11.042	30	10.367	38	11.632	32	10.656	18	9.889	14	10.571
Standard Deviation for Total Score		3.221		2.915		4.486		3.713		4.593		5.247

*Items were scored 1-5, 1 being the most positive attitude toward information retrieval and 5 being the most negative attitude.

Appendix F

Verbatim Responses

to Open Categories on

The User Questionnaire

User Questionnaire

List of "Other" Responses on Question #1

Please check the main purpose(s) for which you used the services of the Resources Center.

-Information for a workshop

-Evaluation of drug abuse program (CDE)

Dissertation

-Developing an R&D conceptual memo

-To have print-out on reading, available for students at the Denver Center

-Bibliography from specific educator

-Education Assoc. results with sanctions

-Provide USOE staff material

-Secondary curriculum for slow learners

-Preparation of federal proposals (2)

-At invitation of director

-College visited the Resource Center

-Methods of Management of Instructional data

-OE Staff Studies

-Evaluation of Filmstrips of science from different companies

-Dissertation Bibliography

-Gathering facts on playground surfacing

User Questionnaire

List of "Other" Responses on Question #2

Where or how did you first hear about the services of the Resource Center?

-Instructor

-Husband

-Presentation by Greeley personnel

-Through library (5)

-personal contact (3)

-on library shelf

-Student

-State Education Department (5)

-SD Title III Personnel

-Report of State Dept of Education personnel at library conference

-State Resource Personnel

-Through a proposal for funding

-USOE

-Have known about it from start

-Jim Simpson

-Western Nevada Regional Education Center

-Graduate School

-College professor (2)

-Utah School Bd.

-ERIC parallel

-Proposal

-SIRS

-Institute

User Questionnaire

List of "Other" Responses on Question #7

Which, if any, of the following problems have you encountered in using the Services of the Resources Center?

-Manual search was not as thorough as it could have been

-Microfiche difficult on eyes

-Some minor gaps in completeness of reports

-Little I did not already know

-Reports varied

-Not sure of source of materials

-Didn't receive any of the documents I ordered

-Much of material too dated

-Great help, but took two months

-Microfiche reader only available at resource center

-too little time (mine) to do it justice

-All materials not available

List of "Other" Responses on Question #8

Other suggestions for improving the Center's services than those listed.

-Included in expanded subject area coverage, include specific literary works and reviews

-They do "good" work

-We felt the materials were excellent

-Don't send out microfiche unless a reader is available

-Provide material, not theory--we're full of that

-Results need analysis and synthesis

-Continue the program

-Delineate between information on a speech or research study. Would like to know what types of data go into the computer. Thought it was completed research only.

-Materials seemed quite up to date

-Services do not appear too well publicized

-Mission-oriented analysis papers aimed at particular practitioner audiences

-Technical assistance to clients to help them interpret and use the information received.

-Do some in-depth relevance studies

-Workshops to train systems operators and user to use information

-Each school district might be given a workshop on use and availability of ERIC material

-It may be well to include an educational sheet with each order suggesting to users how to make their requests more specific and thereby more useful.

-Better dissemination of information about services

-Didn't furnish the manual search material that they promised

-Improve the evaluation form

-I feel any help given has not justified the amount of time consumed in reports, materials to go through, etc. So far, I have really received no help at all.

-Request filled promptly but microfiche films not pertinent.

User Questionnaire

Responses to Question #9

Can you cite any instances where information from the Resources Center has contributed to changes in programs and practices?

-Special education

-Material provided basis for change in social studies program. Present projects include salary schedule modifications, guidance program planning and development of humanities program at the secondary level.

-Open-space instruction; individualized reading program

-Planning to purchase 2 tachistoscopes for phase training

-Curriculum revision for new building; provided information for own profession and personal growth of knowledge in areas related to my major.

-Development of secondary reading program

-Not directly, although the Resource Center provided two of our courses with a specific program.

-Open space; individualized instruction in reading

-Have better and more thorough information about own discipline

-Changing of staffing patterns

-Flexible scheduling in high school

-Curriculum revision

-Helped in providing more 'inquiry-centered' BSCS biology classes for students

-Help in building a continuum of skills for a K-12 English language arts course of study

-Plan to revise curriculum on basis of materials received

-Thesis research

-Remedial reading (2-6)

-Area is curriculum, but too little time to evaluate changes

-Development of team teaching in new junior high school

-May use for remedial reading and environmental education information

User Questionnaire
Responses to Question #9, continued

-Students used it for enrichment (to accompany a reading of the Iliad)

-Could eventually influence areas of instruction

-My own research is for program learning ideas. The research that has been done in this area and hopefully for curriculum revision

-An aid to programmed math for special students

-Material being used to help gain background to discuss policy change with school board

-Yes

-Yes, in new program of re-grouping for reading; in attempt to set up individualized learning program

-Possibly, can't give direct examples

-Yes: 1. World of Work program
2. Study on attitudes
3. Information on Dyslexia
4. Drug education material

-Helps me develop curriculum (Teacher--college or univ)

-Valuable suggestions

-Only in my own personal teaching

-Open space, individualized reading

-We are evaluating our secondary handicapped and counseling program because of information we have received

-Assisted in development of rights, responsibilities, regulations student handbook for the district

-Has aided in program decisions as to kinds of centers to be developed and activities they might participate in.

-In process of curriculum revision now as a partial result of material obtained

-Helped us establish a pass-fail grading system for some of our classes

-Information from the Center used for direction or guidance in Special Education services

User Questionnaire
Responses to Question #9, continued

-In my own case, I have received information about organizing IMCs which is helping me and my school's faculty to plan for our new IMC 9 months hence. Information about individualized instruction has assisted our principal in effecting some curriculum changes.

-General background received from such research merely helps keep me abreast of changing philosophies and practices that help me deal with everyday problems.

-Some articles about noise are being used to design a program for use in a "total communication" unit to be presented to elementary school children.

-The materials sent on the New York State K-12 English curriculum has helped a great deal in our working on a continuum of Language Arts skills.

-Back-up information on a negotiating problem.

-In training situations, this service has greatly effected the up-dating of programs and instruction.

-Has helped supply information for changing reading program in our school-- helped teachers to prepare for shift.

-In some of my presentations in composition.

-1. Mesa Elementary School, BVPS
 2. Boulder Valley School Board
 3. CSU - Doctoral program ineducation

No. of Responses:

Yes	48	28.6%
No	58	34.5%
No Response	62	36.9%

No. of programs named - 62